GREEN'S FRUIT GROWER

AND HOME COMPANION.

Four plants of Loudon with Green's Fruit Grower one year for 50c.

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OUR HEALTH DEPARTMENT

The Garden Plot.

Written for Green's Fruit Grower by J. W. WORCESTER, M. D.

In looking 'round the garden plot
How many things are seen,
That need attention now and then
In order to be clean.
The pruning knife will do some good,
And the spray-pump also, too;
They'll strike the bugs and fungi dead,
And make the things look new.

The sparrows need attention, too,
When feeding on the buds
By a little cupric sulphate new,
And a dose of good soap suds.
Their diet then becomes quite bad
And even makes them sick,
For they leave the spot and fruits therein
And die in bushes thick.

The rubbish too that's in the way
Will make a flaming heap,
When a match is struck within its mass
The flames will high up leap.
The spores and eggs of parasites
And foes in dormant state
May try to scape from the burning mound,
But alas! alas! too late.

A few such things as we cite above,
When attended to in time,
Will save a deal of trouble, too,
And give us rest sublime.
Then the coming Fall will give us joy
Through efforts the season past,
With trees and things all full of fruit,
A bounteous reward at last.

For Cold Feet.

For keeping the feet warm throughout the night in rooms where no fire is kept, the heated soap-stone or the hot water bag, filled from the tea-kettle before retiring is better than wearing knitted slippers or hosiery to bed. Cases of outing-flannel, or of pieces of old soft wool flannels, should be made for foot-stones and hot water bags. These may be buttoned over, or closed by means of a draw string. Cold feet is one of the most common complaints, and nothing so disturbs the sleeper as cold feet. The foot-stone or water-bag, one on each side of the bed, within the bed and at the foot is the best known remedy for this common trouble. No fears of unhealthfulness of the practice need be entertained; it is vastly more unhealthful to lie shivering and chilled because of the feet becoming cold during the night. Nor can it be unhealthful to the extent that is sleeping in unventilated, or illy-ventilated rooms.—Washington Home Magazine.

The Benefits of Early Rising.

It was once laid down by a celebrated writer and historian that the difference between rising at five and seven in the morning for the space of forty years, supposing a man to go to bed at the same hour every night, is nearly equivalent to the addition of ten years to the life. This consideration should carry very great weight, and be sufficient to induce those who have not hitherto practiced this habit to commence to do so, more especially the people who are always complaining that life is not long enough for them to transact all the work that they have to perform. There is much foundation for their complaint if they persist in wasting so many valuable hours of the day in bed. The advantages and benefits of early rising cannot be overestimated; in the early hours of the morning the brain is clearer and more ready for work, and after a night's sleep we should be ready to attack the work of the day.—New York Ledger.

When People Catch Cold.

The "cold spots," meaning thereby the surface areas peculiarly susceptible to cold are principally the nape of the neck and the lower part of the back of the head, the front of the abdomen, and the shins. The acute discomfort and the sense of impending disaster which results from the steady play of a current of cold air upon the neck from behind are well known. The necessity of keeping the abdomen warmly clad is also generally recognized, though perhaps not as generally carried into practice. Curiously enough few people are conscious of the danger they run by exposing the usually inadequately protected shins to currents of cold air. This is the usual way in which colds are caught on omnibuses. When driving one takes care to cover the legs with a rug or waterproof, but on the more democratic conveyance rugs are not often available, and the reckless passenger by and by awakens to the fact that the iron has entered into his soul—in other words, that he has "caught cold." People who wear stockings, such as Highlanders, golfers and cyclists, invariably take the precaution of running the thick woollen material down over the shins, the better to protect them against the loss of heat, though, incidentally, the artificial embellishment of the calves may not be altogether foreign to the manoeuvre. This is an instance of how all things work together for good. It does not, of course, follow, because certain areas are peculiarly susceptible to cold, that a chill may not be conveyed to the nervous system from other points. Prolonged sitting on a stone, or even on the damp grass, is well known to be a fertile source of disease; and wet, cold feet are also, with reason, credited with paving the way to an early grave.—The Lutheran World.

Colds.

A medical contributor to The Stockman has an excellent article on the above subject, from which we make some extracts:

"It is generally thought that colds are caused principally by sudden changes in temperature, sitting or standing in drafts or exposures of various kinds. While all of these things have more or less to do with one's contracting a cold, yet they do not constitute the primary cause. Exposure or sudden atmospheric changes simply favor the conditions that already exist in the body for the culmination of a cold. As long as one is in good health he will not contract a cold, no matter how extreme atmospheric changes may be, because a healthy body, properly clad, will quickly accommodate itself to such changes. Extreme exposure, of course, predisposes to catching cold for the reason that it interferes with the workings of the various organs of the body. A cold is nothing more nor less than a poisoning of the blood due to a congested condition of the excretory and secretory organs of the body. The disagreeable symptoms accompanying a cold result from the effort nature makes to throw off the locked-up poisons in the blood.

"Bad air and bad food are potent agents in poisoning the blood and necessarily in producing colds. Impairment of the digestive organs is probably one of the most common predisposing causes to catching cold because when digestion is impaired the circulation of the blood is always affected and the blood is not thoroughly purified while passing through the lungs as it should be. A mere overloading of the stomach, too rapid eating or the consuming of bad or improperly prepared food is sufficient to impair digestion and greatly predispose to contracting colds. There are many persons who take cold very easily, and almost all of them will be found to have some impairment of the digestive organs.

"It should be an invariable rule with every one to eat in moderation and to partake of none but the very best of food; to take an abundance of outdoor exercise; to dress so as to be comfortable; to ventilate sleeping rooms well and breathe good, pure air. By so doing one will not only not take cold easily but will ward off other diseases and live longer. If, however, one is unfortunate enough to contract a cold there is no better remedy than a good sweat. A Turkish bath, if attainable, followed by a ten-grain dose of quinine, will almost always break up a cold. In the absence of a Turkish bath, a hot foot bath containing mustard, accompanied by a hot potation while the feet are in the bath and a dose of quinine on retiring will break up almost any cold if taken within twelve or fifteen hours after the cold begins."

Breathe for Healthfulness and Longevity.

But some one will say: "I do breathe."

Something over forty years ago I was acquainted with a lady who was fast declining with consumption, as it was supposed. She was sent to a sanitarium for treatment. The specialist diagnosed her case and told her to breathe. "Why, doctor, I do breathe," said she. "No," said he, "you only play breathe, as children say: take a long breath, fill your lungs as full as possible and retain your breath as long as possible." She tried it and then told the physician that a sharp pain pierced her lungs as soon as they were filled. "Ah!" said the doctor, "that is just what I expected. That proves that my diagnosis is correct."

Your lungs, for lack of employment, are fast refusing to be lungs at all. They are fast becoming ossified (turning to bone). You usually take only short breaths, and one part of your lungs is not filled at all. Take long breaths and hold them long. She was ordered no medicine, but learned to breathe, and in a few weeks she returned home cured of consumption, and she is alive yet, and she still knows how to breathe.—D. Howard.

(I would not say, hold your breath as long as possible. This might be carried to excess. A wise person says, empty the lungs, then taken in through the nose all the air possible and hold it while you count three. Repeat and hold air in lungs while you count four. Repeat and hold air while you count five—no more.—C. A. Green.)

Diet as a Moral Agent.

A food experiment is being made at the Elmira Reformatory, in New York State. All civilized nations hold out some inducements to the criminals in confinement to sooner secure their release from legal restraint. A certain amount of time is always taken off for good behavior. The criminal has often been exhorted to this end by father, mother, sister, brother, and by others who had his interest at heart. His manhood, his future, his ambition and his hope of quick release from confinement have been appealed to, and in many cases in vain. Now it is to the man's stomach that the appeal is to be made.

The proposed experiment contemplates, says the Medical Review, a somewhat enlarged scale of dietary privileges, increasing from grade to grade, from the lowest to the highest, so that within due and proper limit of indulgence of the appetite by prisoners in a prison reformatory for crime, they can, out of their own accumulations, have the privilege to select meals at their pleasure, provided always that they keep their expenditure within the limits of the reformatory. The prisoners, under the wage-earning system of the reformatory, as it is at present, must earn their living and keep a credit balance to their accounts, respectively, in order to progress toward their release by parole. A prisoner to maintain a credit balance, must needs restrain, regulate and exert himself in a manner which accomplishes and shows his improvement; but hitherto the diet rate has been inflexible. It is believed that if more latitude is allowed, and the prisoner has a chance of tickling his palate occasionally with mince pie, a juicy roast, or other home-like dainties, he will be more likely to make an extra effort to reform. In other words, if he has an inviting menu to choose from for breakfast, dinner and supper, he will get up and be a man.

Black Currants.

Many are the virtues of black currant jam and jelly. It was used by our grandmothers as gruel; it was given the children to eat when they had sore throats. A pitcherful of black currant tea, made by pouring boiling water over two or three tablespoonfuls of the jam sweetened or not according to taste, was always kept on hand in fever cases, and made a delightfully cool and thirst-allaying drink. The jam was made by using three-quarters of a pound of sugar to a pound of fruit, and boiling over a slow fire till a little poured on a plate would set.—American Agriculturist.

Kieffer Pears.

One asks me to send him some of the above pears. They were all gone a month ago. How some men can keep them until winter I cannot tell. Think I know how to handle them, but they won't keep long. I was among the first to recommend this pear, although some of the knowing ones hooted at the idea, and said it was not fit to eat. Some five years ago a party wrote to me asking whether I would advise planting it largely; to which I replied yes, all you have room for. They planted 500 trees, and last year sold from those young trees $600 worth of pears. There is no doubt that there were planted this fall as many Kieffer pear trees as all other varieties combined. It has become among pears what the Ben Davis is among apples as a market fruit. Even at my advanced age I am tempted to plant 1,000 trees of it.—Samuel Miller, Buffton, Mo., in Rural World.

Brief Notice, Bulletin 109.

New York State Agricultural Experiment Station.

Those who are interested in growing strawberries should read bulletin No. 109 of the New York Experiment Station, Geneva, N. Y., by Wendell Paddock. It contains an unprejudiced report on the large number of new varieties which are being tested at this Station. Promising new varieties are especially mentioned and lists of early and of late kinds are given. It also contains a summary of previous reports on several varieties which have been tested more than two years.

He Knew How.

A baby beaver was caught and given to a gentleman as a pet. Beavers, as you know, build dams in which they can make their houses. But here was this poor baby living in a house where there was no possibility of his having the kind of home that he would love to have. One day when the little beaver was in the kitchen, a leaky pail was put on the floor. The moment the baby beaver saw the water running in a little stream across the floor he ran out in the yard, and appeared in a minute with a chip. The gentleman who owned the beaver was called to see him. The chip was placed in such a way as to stop the water, and the beaver hurried out and came in with another bit of wood, and then some mud. Orders were given that the beaver was not to be disturbed, but allowed to work out his plan; and in four weeks he had built a solid dam around the pail in which was the water.—The Outlook, New York.

Hedge Plants.

Hedges for protection are not as common as they might be. They are not only beautiful in themselves, but, if properly managed, are cheaper than any fence—except a stone wall. There are numberless instances of well-cared-for osage orange and honey locust hedges being kept in first-rate condition for half a century, and there is no reason to believe they might not last for nearly as long again. They have to be annually trimmed, and, indeed, are the better for two trimmings a year; but one who understands this will get over the work so rapidly, that it takes little more time than it would to give the annual white-washing to an ordinary fence. When the expression "well cared for" is used, it simply means that the cutting must always be of such a character that the bottom of the hedge is left the widest part.—Meehan's Monthly.

Loudon Raspberry.

I went to the grounds of Mr. Loudon, at Janesville, Wis., where it originated, and when the fruit was ripe. After spending nearly two days examining it on different soils, and consulting Prof. Goff, who is very conservative, and who visited the plantation the day previous, we fully agreed on one thing, and that was if it does as well in other localities as it does at Janesville it will prove a valuable acquisition to our list of red raspberries. To satisfy myself as to its carrying qualities some were picked on Thursday afternoon which I carried to Fort Atkinson, Madison, Sparta, and to West Salem, where my wife canned them on Monday following, when she pronounced them in good shape. I compared it on the route with other red varieties both in quality and productiveness and found it as good as any I saw. Though the season was quite dry the bushes were well loaded with fruit, but as it was a new thing and high in price I only advised people to plant a few for trial and secured fifty for my own planting during the spring and summer of 1895. As I was still receiving letters of inquiry on the same subject I concluded to make another visit to Mr. Loudon's grounds, so I fixed the time at July 12th, and invited some practical fruit-growers of large experience to be present and I can do no better in answering the question I am at present doing, than give the statement drawn up by Mr. Harris and signed by them: "We, the undersigned, as committees of the Wisconsin and Minnesota State Horticultural Societies, hereby certify that we have this day visited and carefully examined the new seedling Red Raspberry, on the grounds of F. W. Loudon, its originator, at Janesville, Wis., and freely say that it is the most promising sucker variety of Red Raspberry that we have ever seen for productiveness, size, quality, flavor, firmness of fruit, hardiness, vigor and health of plant. John S. Harris, Pomologist, Minn.; Charles W. Sampson, small fruit grower, Minnesota; L. G. Kellogg, president; A. J. Philips, secretary, and R. J. Coe, treasurer of Wisconsin State Society; and D. C. Converse, and G. J. Kellogg, small fruit growers of Wisconsin." The weather was at the time of our visit and six weeks previous very dry. Will say that on my trip home I had the berries tested by over a dozen people—hotel keepers and fruit growers, and without exception they pronounced it very good. It fruited on my grounds in La Crosse County last season and I picked a pint as late as August 25th, and all who saw it pronounced it fine both in bush and fruit. As to covering will say that while there are small fruits that will live and produce fruit in this latitude (La Crosse County) without covering, I know of none but that it will pay well to cover in the increase of the crop. So I covered my vines carefully last fall, and will report the crop later if I have any. At Janesville when I visited Mr. Loudon's plantation last week, I found none covered and he informed me he never covered his. I have taken some time and space to answer these questions. As the answers go into so many homes I have given the opinions of others as well as my own. It is a new fruit, originated by the persistent work of Mr. Loudon.—A. J. Philips.

The Sanitary Value of Sunlight.

In a great many households as much pains are taken to exclude sunlight as if it were poison. This course is adopted because fears are entertained that the brilliant radiance will affect the color of carpets, furniture and other articles. But the fact is now coming to be widely known that sunlight is a wonderful minister of health, and this consideration leads well-informed people to welcome it, instead of trying to banish and exclude it. Many forms of disease to which man and beast are subject are due to the presence in the human system of microbes or bacilli; and it is now known that some species of bacilli are killed by strong sunlight. This is particularly true of the typhoid and anthrax germ.

Whipping Balky Horses.

Notwithstanding the fact that the press continually admonishes whom it may concern that it does no good to whip a balky horse, almost every owner or driver of one does it to-day. It is probably the greatest piece of horse folly in existence. It is not a remnant of barbarism, but it is continued barbarity, and brings out what original sin there is in a man.

The brain of a horse can retain but one idea at a time. If the idea is to sulk, whipping only intensifies it. A change of that idea, then, is the only successful mothod of management. This may be accomplished in scores of ways, a few of which are here named:

Tie a handkerchief about his eyes; tie his tail to the bellyband or back-band; fasten a stick in his mouth; tie a cord tightly about his leg; clasp his nostrils and shut his wind off until he wants to go; unhitch him from the vehicle and then hitch him up again, or almost any way to get his mind on something else.

Whipping or scolding always does harm. The treatment should always be gentle. There are more balky drivers than horses. —National Stockman.

Root Grafted Apple Trees.

J. L. M., Wintersville, Ind.—What are the advantages in root-grafted apple trees over budded stock?

Answer.—To grow apples trees successfully from grafted apple roots, requires considerable experience. Experienced nurserymen often fail in securing a good stand from grafted roots; therefore, they practice budding more generally every year. Perhaps the greatest inducement for nurserymen to plant grafted apple roots is that they can graft them during the leisure of winter, thus keeping men employed who would otherwise be idle. A novice might succeed with these grafted roots, or he might not. At present, the price of first-class apple trees suitable for planting in orchards is as low as they possibly can be produced. It would seem to be unwise to take the chances in planting that which is so uncertain in results. Grafted apple roots, in order to succeed well, should be planted early in the spring, on rich soil that does not bake or harden. On stiff, clayey soil, they will not succeed. They should be planted deep so that only one bud appears above ground. The soil should be packed about them as closely as about cuttings, and they must receive careful culture, the first year especially.—Chas. A. Green, in Rural New Yorker.

A Time to Laugh.

"My hands are awfully cold," said the pretty girl, suggestively, as they drove home from the dance.

"Why didn't you bring a muff with you?" asked the practical young man, prosaically.

"I did!" she snapped, but she wouldn't explain where the muff had gone to, and he has been wondering ever since just what she meant.

A ticket seller in a theater owned a parrot that learned to exclaim: "One at a time, gentlemen! One at a time, please!" for this sentence was constantly in the mouth of his master. The ticket man went to the country for a summer vacation and took the parrot with him. One day the bird got out of his cage and disappeared. Toward evening he was found despoiled of half his feathers sitting far out on the limb of a tree, while a dozen crows were picking at him. The poor parrot, with his back humped up, was edging away and constantly exclaiming "One at a time, gentlemen, one at a time, please!"

An old lady went on board Nelson's flag ship, the Victory. On reaching the spot where the great naval hero was wounded (which is marked by a raised brass plate) the officer remarked to her: "Here Nelson fell!" "And no wonder!" exclaimed the old lady, "I nearly fell there myself!"

"These gloves are not the latest style, are they?" she asked. "Yes, madam," replied the clerk, "we have had them in stock only two days." "I didn't think they were because the fashion paper says black kids have tan stitches and vice versa. I see the tan stitches but not the vice versa." The clerk explained that vice versa was French for seven buttons, so she bought three pairs.

Maud Muller on a summer's day, raked the meadow, sweet with hay. A summer boarder, whose words were fair, she married, and went away from there. And she wished she'd remained, when she saw her mistake, wed to that other kind of rake. —American Agriculturist.

Young and Foolish.

Do you remember, little wife,
How years ago we two together
Saw naught but love illumine life
In sunny days or winter weather?

Do you recall in younger years
To part a day was bitter pain?
Love's light was hid in clouds of tears
Till meeting cleared the sky again.

Do you remember how we two
Would stare into each other's eyes
Till all the earth grew heavenly blue
And speech was lost in happy sighs?

Ah, me, 'twas years and years ago
When all this happened that I sing,
And many a time the winter snow
Has slipped from olive slopes of spring.

And now—oh, nonsense, let us tell!
A fig for laugh of maids or men!
You'll hide your blushes? I'll not. Well—
We're ten times worse than we were then.

Swiss Mountains.

Mountain ranges are mere wrinkles on the surface of the earth. Scientifically, we measure these wrinkles by finding out how high they are above the sea level. There are two classes of mountains—the table and the folded mountains. As to the individual points or peaks, which are the highest, they are of two classes, those which are volcanic and those which have defied weathering or denudation. Mountains of direct volcanic action are rare in Switzerland, those of Hohzau, near the Lake of Constance, being the only representatives. When the country was raised above the sea there was a natural slope toward the oceans, and the water from the melted snows or the rivers cut through the land. The water shed then was plowed by these streams.

Cherries in Russia.

Professor Hansen, of Iowa, who has been traveling in Russia, writes that he finds on the Moscow markets great quantities of the Vladimir cherries. They come mainly from a district 100 miles east of Moscow, where immense tracts are planted with this cherry. The fruit is shipped by carloads from these far northern cherry orchards to all parts of European Russia and in Asia.

"On the sparrow hills, which are merely bluffs south of the city of Moscow, I also found large orchards of a cherry closely resembling the Vladimir. The Vladimir is as large or larger than Early Richmond, with a small pit, is black in color, with highly-colored juice, quite firm flesh, and of delicious quality. It would be called a notable fruit at any point in America. The cherries are packed in round, flat, wooden boxes, holding about fifteen pounds. It is propagated by sprouts and sometimes by seeds, as it is an established race and comes nearly true from the pit. The trees may be called large bushes as grown here. Often they are grown with several stems like a bush. They are grown on the renewal plan, as experts grow the grape, currant and gooseberry, but with this bush-cherry the old wood is cut at longer intervals of from eight to ten years. These bush-cherry orchards are a source of great profit."

Hints to Fruit Growers.

—Blackberries are a profitable fruit and may be grown with little labor on almost every farm.

—Never crowd the orchard. Trees should have room to grow; they need plenty of ground and free sun.

—In setting out an orchard confine yourself to a few, well selected varieties of each fruit; as you become experienced you can add new ones.

—It pays to set out shade trees around the orchard to protect the trees from storms; they also assist greatly in beautifying the premises.

—It is poor policy to depend on a single crop, failure is apt to come, and it is most disastrous to the man who has placed all his hopes on one crop.

—Don't imagine that to have a profitable orchard all you have to do is to buy trees, plant them and afterwards allow them to take their own chances.

—There are two dangerous extremes in the selection of varieties for the orchard. The one is the liability of selecting too few, and the other too many. You can strike the medium if you observe carefully the success of other people.

—Every horticulturist ought by this time to know all about the copper solution for fungus diseases. The usual mixture is six pounds of copper sulphate and four pounds of lime to twenty-two gallons of water. Sprayers are so numerous that it is difficult to name any one that is better than another.

—Spraying has a tendency to heighten the color of red apples and to give a blush to the light skinned sorts. This is due largely to the effect upon the foliage. It must be considered that the foliage is the lung of the tree, and without good, healthy foliage we cannot reasonably expect bright, healthy looking fruit. When the foliage is healthy, the apples will hang longer on the trees, giving them more time to mature, so as to bring them to the highest state of perfection.—Montana Fruit Grower.

Last Season's Experience With Fruit.

Our land here lies immediately on the northern margin of Lake Ontario, the influence of which appears to make vegetation at least ten days more backward than on land even only half a mile further back. This told largely in our favor when the sharp frosts between May 13th and 22nd (on four nights of which the thermometer, five feet from the ground, dropped to 25 degrees, 29 degrees, 27 degrees and 29 degrees) come upon us; as our apple, pear and plum trees and grape vines suffered less than those even a short distance inland, where the crops were almost entirely destroyed owing to their more advanced state. On our pear and plum trees the blossom afterwards opened apparently all right, but close inspection of the more exposed showed many of the fertilizing organs blackened, thus thinning the crop considerably. Though a sheltered block of Lombard plum trees, afterwards fruited so heavily that notwithstanding attempts at supporting the branches many of them gave way under the weight of fruit; and many pear trees, especially Flemish Beauty, offered a good crop in the neighborhood. A few of the shoots on the lower branches of the grape vines were damaged, but still we harvested at least three-quarters of a crop of unusually fine grapes. Strawberries, usually a leading crop here, suffered largely. From a plot which the previous year gave us close on 7,000 quarts, we picked this year an additional 2,000 quarts. Raspberries and blackcaps produced a fair crop of fine fruit. The few bearing peach trees, which the last year had given us a fair crop, had not a fruit. As for apples the orchards in this neighborhood for a mile or so from the lake shore, have seldom yielded so good a crop of perfect fruit, while in orchards a few miles further north there was practically none. The result of spraying plum trees and grape vines was very satisfactory. I cannot agree with Mr. E. B. Stevenson, in your January issue, as to Parker Earle strawberry. Here, of Parker Earle, Bubach, Jessie, Warfield, Haverland, Michel's Early, Williams, Woolverton, Burt, Enhance, Gandy and Lovett, the first two named gave the best result. Sturdy Old Crescent made a good showing with Michel's Early substitute for Wilson as a fertilizing companion in several neighboring patches, and appears to be an old reliable variety under adverse circumstances.—Arthur G. Heaven, in Canadian Horticulturist.

Success in Fruit Gardening.

Published accounts are given of the success of small orchards planted a few years ago in Northern Ohio. Among others is that of Aaron Teeple, who ten years ago bought three acres of land, built house and barn on it, and planted it with a general collection of fruit trees including peaches, pears and plums, and twenty of the most popular grapes. One-half of the ground is devoted to market-gardening. For three or four years he has taken premiums for fine fruit. It is said that the receipts this year will exceed $600. The plum crop was over 50 bushels this season, and the fruit large and highly colored. This furnishes a fine example of the brief time required to bring fruit trees into profitable bearing.

Finance.

(Written for Green's Fruit Grower.)

In a country like this the financial system should not be subjected to the speculation schemes of private bankers, or unscrupulous politicians. Nor should the circulation be upon the old-time idea of hard-coin basis. The engraved paper dollar is a work of art and industry. Modern civilization with its refinements, education and Christian elevation of thought and sentiment seeks a system of finance that supports and does not hinder industry, but provides for all a certainty in the field of daily avocation. The accumulation arising from industry in the form of property should be well sustained by a fund ample for the needs of circulation, and large enough to prevent any retardation of industry. The volume of circulation should bear some relation to the values of exchangeable property and the activity of trade and industry. In the United States this does not now, owing to the increase in the exchanged values bear a proportion sufficiently large to supply the wants of the people and a retardation of business has been the consequence for years.—Wm. Clayfoote, Springfield, Ohio.

(Reply: The above touches a leading question which I do not expect to settle in these few lines. When panics and hard times come, and they will come at long intervals, people charge the money of the country as the prime cause. But panics will come in any event. They are the result of over trading and over expansion. Therefore I consider our currency (money) not responsible for the hard times. Soon as good times come on, we will hear less complaints about our monetary system. The era of low prices is largely owing to our closer relations with Europe, and other portions of the earth, which compel us to conform to the methods and prices which prevail in other countries. If our recent hard times, now well over, teach us economy and thrift, they will avail much.—C. A. Green.)

—The highest mountain in the world is Mount Everest, in the Himalayas—twenty-nine thousand feet, or five and three-fourths miles.

—In the normal state a dog executes twenty to thirty respiratory movements a minute, but while he is excited or is running in the heat of the sun this increases to 300 or 350.

—The frog deposits its eggs in shallow water, where the warmth of the sun promotes speedy hatching. The common snake often selects a bed of decomposing vegetable matter. The crocodile and the clumsy sea tortoise go ashore to lay their eggs.

Uncommon Incidents.

Not one marriage license for white persons has been issued in Leon County, Fla., since last June, but twenty pairs of colored people have been united. How long would it take to "color" the whole population at that rate?

* * *

A citizen of Big Rapids, Mich., loaned Ezra Smith $5 when the war broke out in 1861. He received a letter from Sedalia, Mo., the other day, with a $5 bill inclosed. This was the first he had heard from the then young fellow, and he supposed he had been killed in the war.

* * *

Two French newspaper men, who started without a cent from Paris a year and a half ago to go around the world, earning their way by disposing of articles and pictures to the newspapers of the towns they visit, have got as far as Hong Kong. From time to time they print a paper called En Route, gotten up entirely by themselves. The number made up at Bombay was written in English, French and Gujerati.

* * *

As the result of an election wager, a man in Ripley, O., is going to shave his head, gild it and walk a mile without his hat if McKinley is elected. His opponent will silver his head if Bryan is the successful candidate. The man from Ripley, according to election returns, will decorate.

* * *

At Ft. Fairchild, Me., a tramp called at a boarding-house and asked for supper and lodging, and in the morning surprised the proprietor by voluntarily paying for his keep. The second surprise came in a few days later when the boarders at the house found that their Sunday suits had been overhauled and the pockets rifled of all their loose change. As they now figure it out the tramp got about $13, including what he paid for his night's board and lodging.

* * *

Verona, in Italy, boasts of a pair of twin sheep, each having six legs. The extra legs are hind ones of the same size as the normal ones, though they do not reach to the ground.

* * *

Oats, wheat, and even corn leaves, are seen in some early autumn millinery, notably in hats that come out from London.

* * *

The late Charles Crocker, of San Francisco, stipulated in his will that his son George should at the end of five years, come into possession of $500,000, providing he kept sober during that period. George has managed to keep away from intoxicants for the past five years, and last week came into possession of the money.

* * *

A farmer in the south of England, whose cottage is some distance from any of the neighboring villages, has trained his dog (which, by the way, is a Spaniel) to trot to the Southwestern Railway Station, and there pick up the London papers, which the guard of the train throws to him.

* * *

A mortgage dated April 1, 1819, was satisfied last week by Henry Piper, the owner of a house in Newark, N. J. The original sum for which the mortgage was given was $750. From time to time payments had been made on the mortgage, and the final payment was $340. The total amount of interest that had been paid on it was about $3,000.

* * *

Two boys of Haskell County, Kan., recently applied a lighted match to a squirrel's tail to see if it would burn. The squirrel ran under the house, and the blazing tail soon set the building on fire.

* * *

About 200 miles from Sydney, N. S. W., is a place called Wingen, where, it is said, there is a coal mine that has been burning over 100 years.

* * *

Mrs. S. E. Bagley owns a fine plantation about three miles from Americus, Ga., on which she operates thirteen ploughs. Already she has marketed over 100 bales of cotton, despite the short crop, and will gather at least another hundred. Last year, with the same number of ploughs, she made 300 bales of cotton, an average of twenty-three bales to the plough. There are few farmers in Georgia who can show a better record at cotton raising.

* * *

A pullet owned in Middlebury, Vt., has distinguished herself by building a nest in a poplar tree, fifteen feet from the ground, where she flies every day and lays an egg. And the owner distinguishes himself every day by taking ten cents' worth of time and a heap of vexation to climb up the tree and get the egg, which is worth about two cents.—New York Witness.

A FALLACY EXPLODED.

Men Suffering With Stricture or Enlargement of the Prostate Gland Need No Longer Appeal to the Surgeon.

One remarkable result of the discovery of Solvent-Alterans for the cure of stricture and prostatic troubles is the explosion of the popular belief that the surgeon is the man to appeal to for the cure of these troubles. For centuries men have submitted to the surgeon's knife, have used sounds and bougies to keep the passage open. Operations never have and never will remove these troubles. They simply divide or cut through the obstruction, but never remove it; so that the operation has to be repeatedly performed in order for the patient to obtain relief.

The history of Solvent-Alterans for the radical cure of stricture and the removal of prostatic diseases is a story of earnest investigation, of repeated experiment and untiring labor. Every land has been searched for curative agents until at last success has crowned relentless purpose—chemistry and plant life have contributed an absolute and radical cure for urethral stricture, gleet, prostatic irritation and enlargement, mucous discharges and urinary disorders—the importance of which few can realize who have not been personally afflicted.

We not only publish to the world the formula telling what Solvent-Alterans is made of, but we also publish the names and addresses of scores of men who are glad to testify to the wonderful cures obtained. Of course, in an announcement like this, we cannot find room for many, but if you are interested, send us your name and address and we will send evidence in the shape of testimonials that are absolutely convincing.

Dr. E. W. Hewitt, of Highland Park, Cal., writes as follows:

"I have waited for a time before reporting to you the progress of one of my patients. I treated him twenty-one years ago with sounds and afterwards with electricity, but his case proved to be very obstinate. Twelve years ago he was operated on in San Francisco and was made worse. Under the influence of your Solvent-Alterans the strictures have been removed. It is actually a wonder to me. The old methods of treating stricture I have forever done with. Nearly all strictured men have been fooled by the sounds and instruments until they have little faith in anything. Electricity sometimes cures but it is a great source of irritation, especially in cases of irritable urethra and in nervous patients. I am the owner of the Eureka Springs Hotel and Sanitarium, and now that I have found a reliable remedy for stricture, I shall be able to do a good work in that especial line."

This is a well authenticated case, where the treatment was used by the advice and under the personal supervision of the attending physician.

The result obtained in this case is truly wonderful, yet no less so than in thousands of others. We give below a letter, received November 11, 1896, from Mr. W. G. Westcott, of Sackett Harbor, N. Y.:—

"You will doubtless be pleased to learn of the good results which I have obtained by the use of your Solvent-Alterans. Briefly I will describe my condition when I entered upon the treatment. I had been a sufferer for nearly twenty-five years with a chronic prostatic obstruction, which necessitated the use of a catheter daily. I could write volumes about the unpleasant experiences, the mortification, unrest, uneasiness and pain which I have suffered as a result of this prostatic disorder. You will doubtless know better than I can tell you what I have passed through. The frequent calls to pass the urine necessitated my rising several times during the night, and also passing the same often during the day; the catheter was my constant companion, nearer to me than any friend, and as much a necessity as food. When I began the use of your Solvent-Alterans in April, 1895, I had a little faith that help could be obtained, for I had exhausted every effort, having been under the care of specialists in Bellevue Hospital, New York City, and also treated by one of the foremost physicians in Buffalo. All were disappointing, so far as results were concerned, and I returned home fully convinced that no cure could possibly be found by such treatment. You can well imagine my joy and happiness when I learned of your remedy. I determined to make another trial, which I did, with the result that I have not used the catheter for more than a year. I now pass urine with perfect freedom, it comes quickly without effort, the bladder is fully drained of its contents, and there is no pain or distress attending the effort. You have my best wishes for the future, and for the continued success of your wonderful remedy; for Solvent-Alterans is, in my opinion, a most marvelous remedy, surpassing in effects any other of which I have knowledge."

The result in this case proves the efficacy of Solvent-Alterans in reducing and subduing prostatic enlargement, which is considered incurable by the medical profession. Mr. C. O. Holmes, of Haverhill, Mass., was afflicted in the same way, and was cured after having suffered for fifteen years:

Mr. J. W. Adams, of Pink Staff, Ill., in a letter dated September 6, 1896, says:—

"In the year 1882 I was employed on a carrier track in the roof of a large hay barn, and fell about fifteen feet, lighting astride of a timber which bruised my urethra near the rectum and caused a most violent inflammation to develop. In six months the stream of urine had become very small, so much so, that I could pass scarcely more than a drop or two at a time. I would have to get up six or eight times each night to pass urine, which looked as if there had been eggs broken in it, caused by catarrh of the bladder. I was compelled to strain at stool, and when passing urine it nearly killed me. Sometimes it would dribble constantly, keeping my clothes moist. In this condition I began treatment with your Solvent-Alterans. To-day I am as well as in my boyhood days. I feel well, sleep well, and am working hard, which I have not been able to do for many years. It is impossible for me to tell you how I suffered. Death would have been a blessed relief to me. To-day I am the picture of health. Solvent-Alterans did it. I tried everything but the knife. One bottle cured me in forty days."

Mr. William H. Bews, of Cheboygan, Mich., who is connected with the Swain Wrecking Co., writes as follows:

"I cannot speak too highly of your remedy; it is all that you represent it to be. I had been troubled with stricture for fourteen years, and expected to be so until my dying day, but after using your Solvent-Alterans the third time, I found that I could pass a stream of water that actually surprised me. I felt a little inconvenience after urinating, but it has left me now and I am as sound as a dollar."

Mr. C. C. Aman, of Fort Brook, Fla., in a letter, dated September 6, 1896, says:—

"I commenced to use your Solvent-Alterans three months ago after suffering three years with stricture and during that time being given up by physicians as incurable. I employed it three weeks and was cured sound and well. It has been two months or more since I stopped its use and am as well and sound as ever. I can do as much work as any man. Solvent-Alterans has made a new man of me and I willingly recommend it to all who suffer with stricture."

Mr. F. V. Whitman, of Walkerville, Mont., says:

"My experience with your remedy teaches me that every word in your pamphlet is truthful. Solvent-Alterans removed four strictures of about eight years' standing, clearing the urethra to its normal size. The first application brought relief, and a steady improvement continued until I was cured."

Another remarkable cure is that of Mr. E. L. Putnam, of Baroda, Mich., who had been troubled with prostatic irritation for several years, and who reports that Solvent-Alterans has completely cured him.

In view of the far reaching consequences of urethral and prostatic disorders, it behooves every man to be physically sound. Many men spend hundreds of dollars in an endeavor to obtain a cure for an irritation of the bladder which is easily cured when the stricture, which produced it, is removed. It is not necessary that you place yourself under the care of a surgeon for operation or spend from $25.00 to $100.00 for an instrumental treatment which is sure to prove unsuccessful. You can be treated at home. You can use Solvent-Alterans yourself and observe with satisfaction a gradual cure being brought about.

Permit us, therefore, to beg of you, to send you our free book telling all about Solvent-Alterans and its marvelous cures; also our folder of testimonials from men of all ages and from all parts of the country. We are sure that your intelligent desire for a thorough cure will do the rest. Address us therefore at once, as follows:

EMPIRE MEDICAL COMPANY,
90 Smith Building, Court Square,
Boston, Mass.

OUR POULTRY DEPARTMENT.

The Pert Chicken.

There was once a pretty chicken,
But his friends were very few,
For he thought that there was nothing
In the world but what he knew.
So he always in the farmyard
Had a very forward way,
Telling all the hens and turkeys
What they ought to do or say.
"Mrs. Goose," he said, "I wonder
That your goslings you should let
Go out paddling in the water,
It will kill them to get wet."

A New Dust Bath.

Written for Green's Fruit Grower by Grant L. W. Boomer, Flint, Mich.

Much has been said in regard to dust baths. Thus far the poultrymen have prescribed road dust, which I find of the preceding year to be very scarce, owing to the wet weather and could only be gathered in small quantities, requiring much labor and then securing enough only for a few months.

Some also have said dust from the potato patch is useful, but in damp weather it becomes hard and is useless for that purpose.

I have found something which I think is much better, more easily secured and less liable to get hard. This is the dust secured from bean vines in threshing and is very light, a bushel may be carried from the machine with ease. It is very fine, no lumps being found and is taken from the machine much in the same manner as the grain. From twelve acres we secured five barrels of nice dust.

The dust is taken from the side of the machine and may be run directly from the spout into a barrel. With this supply of dust we furnish our stock with plenty of material for their dust bath and they fully appreciate it, we know by their merry cackle.

Coops which are damp may be dried by applying the dust two or three inches over the bottom of the coop, thus avoiding colds, roup and cholera.

Poultry Notes.

—Cleanliness is the best disinfectant.

—Exercise is good medicine and cheap.

—Dry, warm quarters are a joy to poultry just now.

—If you desire strong eggs for early incubation you should mate up your hens at once.

—In saving the droppings, mix them with dry earth before they have a chance to freeze.

—Clover, by displacing grain, supplies the hens with substances which are lacking in grain, and also bulky food for heating.

—Don't forget to keep the grit-box well filled. This is especially important when the ground is frozen hard, or covered with snow.

—Boiling of brine, as strong as it can be made, is an effective remedy for white mites. Apply to the roosts and dropping boards with a whitewash brush.

—Be always on the watch against draughts in the roosting house. A cold at this time of the year is very apt to run into roup and ruin your flock.

—He who would keep poultry successfully in this northern country, must know that the house must be warm and free from draughts; it is the warmth which brings the eggs.

—Be sure that the water fountains are not allowed to freeze up. The best thing to do is to turn out the water as soon as all the fowls have had a good drink. They should be watered at least twice a day, if you wish a full egg basket.

—J. M. Johnson, Seward, Neb., says it cost him $5.60 an acre to raise and sell wheat, besides rent of land, which is $3 per acre. The yield is 25 bushels per acre and sold for fifty cents, giving him $12.50 per acre for the grain. He adds fifty cents for straw per acre, giving $13 in for $8.60 out.

—Winter weather is here, and while a good many poultrymen are hugging the stove, Jack Frost is creeping into their poultry houses, and spoiling the combs of their fine fowls and especially of those they value most. They have forgotten the small crevices, as they always will when the attention which they need is not given to them at the right time.

—The trouble with people who are supplying fresh eggs is that they become careless, and if they find a nest full of eggs that look clean, they will turn them in whether they know their age or not. That is no way to keep a trade for fresh eggs. Neither will dirty eggs help keep a fresh egg trade. In fact, dirty eggs sell for less than clean ones on the general market.

—These cold mornings it is sweet music to the poultryman's ear to hear the hens singing merrily as they run thither, and yon in search of some rare bit of meat or vegetable or gather about the warm mush of table scraps and scalded shorts or middlings. Do not feed the mush too hot. Do not have it sloppy. Hens like mush rather than porridge, even though their owner be a Scotchman.

—If your hen house is not as warm as you wish it was, the hens may have added comfort at night if, after they have all gotten upon their roost, an old carpet or some sacking be hung around them as a curtain. Let it hang from the ceiling above them down to or below the level of the roosts. To save work it may be fastened permanently to the ceiling and dropped down at night and hung up during the day.

—A neighbor of ours keeps a small flock of brown Leghorn hens. During 1896 there were but three days in which some of them did not lay. What eggs are not used in the home are disposed of to a neighbor. There are always enough families to take fresh laid eggs. This neighbor has repeated calls to supply other families, but she cannot. Our own flock of white Leghorns cannot supply the demand upon them at 25 cents per dozen.

—Clover is as much an egg producing material as it is a producer of milk. It is rich in nitrogen and mineral matter, providing the hens with substances that are derived from it in forms most suitable for the purposes desired, says Poultry Keeper. Lime is an essential substance in the production of eggs, and there are some who use oyster shells for supplying the hens with lime, but clover contains lime in a soluble form and ready for use. The various grains are deficient in lime, and when the poultry receive no food but grain, it is impossible for the hens to lay. When the needed elements are supplied and the hens lay regularly, the carbonaceous matter is appropriated by the egg; but if the hens do not lay, they become fat, and will remain in a condition which brings on some disease.—Western Rural.

The Use of Dry Earth.

We have always cautioned our readers not to overlook dry dirt for the winter, and to store it away before the rains set in. We do not refer to road-dust, which is not very clean, but to fresh, dry earth, which may be sifted, and put away under shelter. It is excellent, not only for the hens in winter, but it is also one of the best substances to use in stalls for cattle or as an absorbent of urine. It costs almost nothing, and is more beneficial on the poultry-house floor than any other substance.—Farm and Fireside.

Poultry Points.

—Have you selected your best and sold the culls? If not, why not?

—It is no earthly use feeding a lot of chicks that are of no use only for the pot; sell them and use the money to buy feed for the rest.

—The knowing just what to sell and just when to sell is often the difference between success and failure.

—We should manage not to keep a fowl or chick any longer than they are a source of income.

—Of course our best breeders must not be disposed of even when they are not laying, as they must be kept for breeding purposes.

—To sell our best even at a good price is foolishness; as long as we wish to breed we should keep them.

—The early pullets should begin laying now and should be given the best of care and feed, as they will make the winter layers.

—It is not good policy to sell all the cockerels, even if you do not want but one as a breeder; by keeping three or four you will have a better selection, and then if you keep but one, he might die, then you would be compelled to buy a breeder.—Inter-State Poultryman.

Notes on Poultry.

Wheat screenings may supply bulk, but they give very little nourishment, says a contemporary. He who depends upon such food for a flock will not have a flock to feed very long. Damaged grain of any kind should never be fed to poultry. Chicks require more liberal feeding, and oftener, than grown fowls, as they are making flesh, muscle, bone and feathers at the same time. For these reasons they require a good supply of varied and nourishing diet.

In winter green food of some nature is necessary for egg production. Any kind of vegetables can be served for the purpose. If the flock can have access to a field of growing rye or crimson clover it will meet their requirements. When fattening fowls for market corn can be used in varied forms. They relish cold mush. Mixing cornmeal with scalding water, or boiling the whole grain until soft, are all good. Celery tops are the best vegetable adjunct at this time.

It has been demonstrated that if one flock, during the winter, be fed with warm grains, and another with cold, that the former will produce during the season more than twice the number of eggs as the other, and will be even much finer in appearance. There are two extremes. You cannot let your poultry roost in trees in winter, nor can you shut them up in overcrowded houses, and then expect success. Success does not lie on either of these routes.

Green Bones Necessary for Success in Poultry Culture.

Editor Green's Fruit Grower:—It is an established fact that green cut bones are necessary for successful poultry keeping. When nature ceases to supply the insects on which poultry thrive in spring and summer, the poultryman who is alive to business must do what nature cannot do in winter, and feed fowls on green cut bone.

Green bones are rich in nitrogen, and, therefore, serve as food. When a bone contains a large share of adhering meat it is all the more valuable. Bones serve several purposes when used for poultry. Being phosphate of lime, they are capable of being digested, which is not the case with oyster shells and grit; and they supply the birds with elements that may be lacking in the food. They also assist in grinding the food, taking the place of grit, and are readily accepted by all classes of poultry. In fact, it is safe to claim that there is nothing that can be used as egg-producing food which serves the purpose so well as green bone; its combination of qualities, nitrogen, lime for egg shells, cost and adaptation to all fowls and all ages, give it a place even higher than meat, which contains nitrogen, but no lime or other mineral matter. Therefore, in preparing a diet for poultry either with a view to increasing the vigor of the bird or developing its egg-producing organs, such food should be selected as science and chemistry have demonstrated to be component part of the structure to which they are afforded as nutriment and sustenance.

None possess these qualifications to such a marked degree as does fresh green bone, which is, therefore, a necessity for the highest success in poultry raising.—A Reader.

—A good man is merciful to his beast, also to his chickens.

—Sanitary surroundings are of more consequence than medicines.

—If you cannot keep your poultry in comfort, cease to keep them at all.

—Light is essential to the health of the hens, therefore, have good windows.

—Eggs intended for hatching should not be kept over four weeks. They must be turned every day or two.

—In one consignment recently a feather dealer in London received 6,000 birds of paradise, 360,000 birds of various kinds from the East Indies, and 400,000 humming birds. In three months another dealer imported 356,398 birds from the East Indies.

Ask Your Friends if they intend to read Green's Fruit Grower this year

The City Boy.

God help the boy who never sees
The butterflies, the birds, the bees,
Nor hears the music of the breeze
When zephyrs soft are blowing;
Who cannot in sweet comfort lie
Where clover blooms are thick and high
And hear the gentle murmur nigh
Of brooklets softly flowing.

God help the boy who does not know
Where all the woodland berries grow;
Who never sees the forest glow
When leaves are red and yellow;
Whose childish feet can never stray
Where nature doth her charms display.
For such a hapless boy I say
God help the little fellow.
—Chicago Journal.

Points in Strawberry Culture.

Strawberry growers may be divided into four general classes—the amateur, the grower for home consumption, the plant-grower and the commercial grower. Each of these parties may adopt a method best adapted for his individual object in view. The aim of the amateur grower is to make a display of fine berries. He concerns himself very little about the number of bushels per acre. We should encourage and respect these amateur growers, for they have demonstrated the possibility of the strawberry.

The commercial grower's success must be reckoned by the net income, and this in some localities depends upon size and quality, and at other places upon mere quantity.

Year after year we find the strawberry occupying new territory. As a rule, soil that will produce both corn and wheat will yield strawberries. The soil must be well drained either naturally or artificially; it should be moderately rich—in a condition to produce fifty bushels of shelled corn per acre or twenty-five bushels of wheat, with a fair growth of straw, per acre. It is doubtful whether it is practicable to apply stable manure immediately before planting. Stable manure has a tendency on some soils to produce too much foliage. The better plan is to manure heavily for the previous crop. Unleached wood ashes may be liberally applied before planting. Upon the nature and location of the soil depends the earliness of the crop. Sandy loam, with a gravelly subsoil, will produce the first ripe berries, especially if it is on an Eastern or Southern slope.

The nature of the soil has also an influence on the color, firmness and quality of the berries. Clayey soil is apt to produce lighter-colored and softer berries. Sandy loam can be more easily cultivated, but clay soil may produce the heavier crop in a dry season. On sandy soil the buds start earlier in the season, and they are in danger of the spring frost.—Country Gentleman.

About Some Fruits.

The fruits at the feast represent all climates and countries. We have reason to be grateful to our friends of Hindostan for passing the oranges around to our side of the table. They have been eating them from a remote period, and passed them on to the Arabs, who carried them into Southwestern Asia before the ninth century. The Crusaders brought them from Palestine into Italy and Provence. The ancients around the Mediterranean were so unhappy as to have died without tasting any of this luscious fruit. We are all eating the descendants of one tree, if the Portuguese say true, for they declare that the progenitor of all European and American oranges was an Oriental tree transplanted to Lisbon and still living in the last generation.

Chittagong, Khasia, the Philippine Islands, Siam and Ceylon furnished the originals of the banana, so conspicuous at the feast, and now cultivated in all tropical and sub-tropical climates. This fruit, of which so many in the whole civilized world are partaking, also forms the chief food of South American negroes. It has a venerable antiquity of tradition, and many believe the banana (Paradise fig) to have been the tree by whose fruit Eve was tempted; while others think the great cluster of grapes brought by Jewish spies from the valley of Eschol, so heavy that two men were required to carry each, were really bunches of bananas.

Pears, cultivated from the most remote antiquity in Asia, and brought from the east by the Romans, occupy a prominent place in the fruit dishes on our big table. Cherries, which Pliny says were brought from Asia, their home, to Italy by Lucullus after his defeat of Mithridates, and of which the first tree in England was planted by Sir Walter Raleigh, add to the brightness of the table as well as its cheer by the red and black globules.

Solomon wished to be comforted with apples, and in this respect he was like large numbers of people, who before and since the Romans brought the cultivated article from the east (they were introduced into Great Britain during Roman occupation) have found apples a consolation in palace, hut and farmhouse.

All hail to the plum, which, deriving from Anatolia and the Caucasus, and whose stones remain the Swiss lake dwellings, was cultivated by the Romans and adds a modest but exquisite dainty to the feast. Damascus, famous for so many things, oldest of cities, venerable forever, may take as just pride in the gift to the world of the damson from the banks of Abana and Pharpar as in her steel or her silk.

The Persian, descendant of famous empires, plucks from its native tree and passes round the table that most beautiful and luscious of fruits, the peach, synonym of fair women's complexions. The Chinaman, by whom it was cultivated from times long past, and by whose great teacher, Confucius, five centuries before Christ, it was spoken of, may enjoy the peach, but cannot justly claim it for his own. Not mentioned in the Bible or by earliest Greek writers, it was probably introduced into Greece by Alexander; so that in this wonderful repast we are even yet affected by the march of that mad conqueror.

Persia and Anatolia provided the original quinces; the Greeks took up their culture, and they are represented on the walls of Pompeii. India, that prolific mother of good things, nursed under its warm sky the first lemons. They were unknown to the Ancient Greeks and Romans and were introduced by the Arabs into Spain between the twelfth and thirteenth centuries; so that this is another instance of the comparative newness of a good thing to European life.

Venerable in history, romance and poetry is the fig, which, originating in Asia Minor and Syria, was probably one of the earliest objects of cultivation. Frequently alluded to in the Bible, the Greeks received it from Caria, and it became one of the principal articles of sustenance among them. Transplanted to Italy and adjacent islands in some prehistoric time, it is now cultivated in all Mediterranean countries, but the larger part of our supply comes from Asia Minor, the Spanish peninsula and the south of France. Fresh and dried, it furnishes a great portion of the food of the natives of Western Asia and Southern Europe.

The fruit of the date palm, native to Northern Africa and Southeast Asia, cultivated from remotest antiquity, is in Arabia the chief source of national wealth and the chief article of food. The Arab sheiks and the children of the desert generally draw power, muscle, nerve, brain, everything, from dates. Pomegranates, whose native habitats are Afghanistan, Northwestern India and the south and southwest of the Caspian, have been very anciently cultivated, as is shown by their Sanskrit name and by allusions in the Old Testament and in the Odyssey, where they are spoken of as cultivated in the gardens of the kings of Phaeacia and Phrygia. They are represented on Assyrian and Egyptian monuments, and were known to the Greeks and Romans.

Olives are native to Syria, Asia Minor, Greece and the islands of the Grecian archipelago. They are now found from the basin of the Mediterranean to South Africa and New Zealand. They were cultivated in prehistoric times. Italy is now pre-eminent in olive growing. The branches of the tree are the emblem of peace, as will readily occur to readers of the Bible. The fruit is used for pickles, and the oil expressed from it is for table use.

A Horse's Sagacity.

This incident was related to me by a friend, who was the small boy of the story:

"From my earliest recollection my father was fond of horses, and he usually kept from one to five in his stables. They were well cared for, and in return he expected good service and speed. We had one horse, Fan, who was the pet of the family, and was considered so safe that I, a little fellow in kilts, was allowed to play around her head and heels without restraint.

"One day I was playing in the yard as usual while old Fan was being hitched up. When all was ready father jumped into the wagon, gathered up the reins, and gave the word to go. But the horse moved not a muscle. He then lightly touched her with the whip; old Fan merely pricked up her ears, but would not budge. Just then my father, a little out of patience, gave the horse a sharper stroke. What was his amazement to see Fan lower her head, carefully seize with her teeth a small bundle which was directly in front of her, gently toss it to one side, then start off on a brisk trot.

"As the small bundle proved to be me, it is needless to say that old Fan was more petted than ever before."—Religious Telescope.

CLUBBING LIST.

Subscribers to the Fruit Grower who may desire other papers or magazines with it are offered the following to select from.

The figures in first column show the regular price of Fruit Grower and the publication named.

Figures in second column show the price at which Fruit Grower and publication named will both be sent one year.

If you want more than one of the papers named you may deduct 40c. from figures in second column, which will tell you how much to remit for additional paper wanted:

American Poultry Advocate	$ 75	$ 50
American Bee Journal	1 50	1 25
American Gardening	1 50	1 30
Century	4 50	3 75
Colman's Rural World	1 50	1 25
Cosmopolitan	1 50	1 40
Delineator	1 50	1 40
Democrat and Chronicle	1 50	1 00
Demorest	2 50	2 00
Detroit Free Press—Weekly	1 50	1 25
Farm Poultry—Semi-monthly	1 50	1 25
Farm and Home " "	1 00	85
Home and Farm " "	1 00	90
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Munsey's Magazine—N. Y.	1 50	1 35
N. Y. Ledger	2 50	1 75
N. Y. Semi-Weekly World	2 00	1 30
Ohio Farmer	1 50	1 30
Peterson's Magazine—N. Y.	1 50	1 25
St. Nicholas	3 50	2 75
Scribner's Magazine—N. Y.	3 50	3 00
The Dairy World	1 50	1 00
Youth's Companion	2 25	2 00

Address,
GREEN'S FRUIT GROWER,
Rochester, N. Y.

Careful Fruit Packing Pays.

C. L. Hartshorn says his fruit is always carefully picked and graded, and usually placed in the cellar. When packed, each barrel contains the same grade of apples throughout. He had occasion to make a shipment of a few barrels of apples to St. Louis, where a good price was obtained. He wrote a letter and placed it in the middle of the barrel asking the consumer receiving the fruit to write him, stating the quality, condition and what the St. Louis market demanded. In a short time he received a letter from a St. Louis commission merchant, praising the quality and packing and asking how many more barrels of such fruit he had to sell. Mr. Hartshorn had no more to sell, but felt convinced that the high price received and the demand for more, fully paid for the best of packing. This plan might well be followed by other fruit growers who have a large packing, by sending sample barrels with similar letters. The importance of selecting only the finest fruit for shipment was never greater than now. Another point is to distribute the fruit so as not to glut the big cities.—American Agriculturist.

Advice about Strawberries.

1. Strawberries do well on almost any well drained soil, which is free from frost, reasonably fertile, and not infested with white grubs.

2. There is little danger of making the soil too rich, but there is a possibility of injuring the plants with commercial fertilizers, if placed too closely about the roots, and with coarse manure.

3. Commercial fertilizers seem to have no effect on white grubs, nor does manure, but the latter stimulates the plants, so as to repair the damage.

4. The best fertilizers are well-rotted manure, bone meal and wood ashes.

5. The best method of preparing the soil is to plow in the fall, mulch with manure, and fit the ground in the spring with cultivator and harrow.

6. The best time to set strawberry plants is in early spring. When plants are to be set in the fall they should be especially grown for the purpose, either in frames or in pots.

7. For matted rows the plants should be set 18 inches by four feet apart, and for hills, one foot by three.

8. In hill culture the runners are all removed, and for the best results in matted rows a part should be cut off, or some of the plants dug out.

9. Generally, it is better to keep a bed only one season, but if kept longer the best treatment is burning soon after fruiting.

10. Winter protection should be given by mulching, and the best material is swamp hay.—Ohio Experiment Station Report.

Some Facts about Missouri.

Its hogs are worth $16,000,000; it has 27,600 square miles of coal fields; has $2,000,000,000 of actual wealth; it has immense plate glass works; it has nearly 3,000,000 inhabitants; it produces 130 varieties of grapes; it yields 218,694 bushels of flax seed per annum; it has over $3,000,000 in school funds.

The hay crop is 2,500,000 tons a year; it leads the world in mineral resources; it turns out 12,500 tons of zinc per annum; most extensive lead mines in the Union; millions of acres of sun-kissed prairies; the oats crop is 30,000,000 bushels a year; its corn crop is 220,000,000 bushels a year; the taxable property is worth $1,000,000,000; the surplus products are worth $140,000,000; it has 625 miles of navigable river frontage; it has over 800,000 acres of Government land.

It stands second in the production of cattle; its horses and mules are valued at $6,000,000; has the largest iron mountain in the world; there are 6,574 miles of railroad in the State; it produces 7,020,320 pounds of tobacco annually; was the first to begin the manufacture of tin plate; the population has increased 500,000 in four years; it produces more apples than any State in the Union; the output of coal amounts to 3,000,000 tons a year; its wheat crop amounts to 28,000,000 bushels a year.

Over 62,371,185 dozens of eggs were marketed in 1895; there are mineral springs in 70 of its 114 counties; 24 counties with an unlimited supply of iron; she produces cotton equal to the best Sea Island grades; the largest and most productive zinc fields in the world; there are ten Republican and five Democratic Congressmen; leads the entire world in the production of watermelons; it grows 134 varieties of wheat and 100 kinds of grasses; the State is fifth in population and wealth; the poultry produced annually amounts to 85,000,000 pounds.

Blue-grass equal to that of Kentucky is produced and more of it; has the largest school fund; for area, of any State in the Union; sheep to the value of $500,000 are raised annually; 35 cities in the State have over 4,000 population each; shipments of lumber from the State amounts to 80,000,000 feet annually; its peach crop has ranked second since 1890, and will rank first this year; it sells each year over $40,000,000 worth of surplus productions; more minerals are produced in Missouri than in any other State in the Union.

It leads the world in lead, having produced 800,000 tons, valued at $35,000,000; she was awarded more first premiums at the World's Fair than any other State; last year 3,582,912 bushels of potatoes were marketed over and above the home consumption; per capita mortgage indebtedness; Missouri, $80; Illinois, $100; Nebraska, $126; Iowa, $104; Kansas, $170; taxed acres in proportion to the whole: Missouri, 25.41 per cent.; Illinois, 30.78; Nebraska, 57.16; Iowa, 46.95; Kansas, 61.57; it has unlimited quantities of granite, marble, lime-stone, sandstone, fire-clay, stone and china clays, kaolin, cobalt, bismuth and copper.—Lockwood Sentinel.

Care of Apples.

There is no question about the importance of so far as possible preventing the bruising of the fruit. From what has been said in strong terms concerning the barrier of a tough skin which nature has placed upon the apples, it goes without saying that this defence should not be ruthlessly broken down. It may be safely assumed that germs of decay are lurking almost everywhere, ready to come in contact with any substances. A bruise or cut in the skin is therefore even worse than a rough place caused by a scab fungus or lodgment provided by the minute spores of various sorts. If the juice exudes, it at once furnishes the choicest of conditions for molds to grow. An apple bruised is a fruit for the decay of which germs are specially invited, and when such a specimen is placed in the midst of other fruit it soon becomes a point of infection for its neighbors on all sides. Seldom is a fully rotten apple found in a bin without several others near it being more or less affected. A rotten apple is not its brother's keeper.

The surrounding conditions favor or retard the growth of the decay fungi. If the temperature is near freezing they are comparative inactive, but when the room is warm and moist the fruit cannot be expected to keep well. Cold storage naturally checks the decay. The ideal apple has no fungous defacements and no bruises. If it could be placed in a dry, cool room, free from fungous germs, it ought to keep indefinitely until chemical change ruins it as an article of food.—Germantown Telegraph.

Gooseberry Rust.

A subscriber in Wakenda, Missouri, sends us some leaves from his gooseberry bushes and says his "Bushes seem to be dying from the ailment," and adds: "My currant bushes (Fay's Prolific) have died from some similar trouble. I have been buying currant bushes and gooseberry bushes every year for several years and cannot get a start. We used to raise them without any trouble, the common sorts. I now have gooseberries two years old, scrubby things (Downings) that do not bear and are dying like the rest that have gone. I want to set out more in the spring and would like to know how to keep them healthy and free from the malady that has been troubling them so much of late."

Upon examination we find the gooseberry leaves sent are infested with what is popularly called rust, known to science as Septoria ribis. This disease attacks all varieties of currants, and the foliage of gooseberries as well. It generally appears a little before mid-summer. The first indication of the disease is the appearance of small, brown shoots upon the foliage. If the plants are properly sprayed with the fungicide known as Bordeaux mixture the injury can be checked. It is safe to spray once just after the plants are well filled with leaves, and a second time about two weeks before the spots or rust may be expected.

If the plants are in fruit and you are afraid of spotting it, you can use a clear fungicide made according to the following formula. We give also the formula for making the Bordeaux mixture:

Ammoniacal Copper Carbonate (clear fungicide).
Copper carbonate .....1 oz.
Ammonia, enough to dissolve the copper.
Water .....9 gallons.

Before making the solution the ammonia should be prepared as follows: Use 26 degrees ammonia, and dilute with 7 to 8 volumes of water. Then gradually add the necessary amount to the copper carbonate until all is dissolved. It is best treated in large bottles, and in them it will keep indefinitely. Dilute as required. For same purposes as the Bordeaux mixture.

Bordeaux Mixture.
Copper sulphate .....6 pounds
Quicklime .....4 pounds
Water .....40-50 gallons

Dissolve the copper sulphate by putting it in a bag of coarse cloth and hanging this in a vessel holding at least 4 gallons, so that it is just covered by the water. Use an earthen or wooden vessel. Slake the lime in an equal amount of water. Then mix the two and add enough water to make 40 gallons. It is then ready for immediate use.

A farmer was driving to town and overtook a friend whom he asked to ride with him. The horse which the farmer was driving was exceedingly frisky, whereupon the farmer attempted to chastise him with the whip.

"Tut, tut," said his friend, "never whip an excited animal; touch him very gently, touch him gently."

But the antics of the horse became more and more frightful, until at last fearing that he might get thrown into a ditch, the friend who was enjoying the ride, asked to be allowed to walk for a bit. After the friend had dismounted, and had reached a place of safety upon terra firma, his ideas of governing the horse seemed to have changed, and he addressed the accommodating farmer as follows:

"If I were you I would never let that horse get the start of me. Give him the whip, and give it to him lively. He needs it. Wallop him and it will do him good."

How true it is that our advice is often governed by circumstances.

How to Make Manure of Muck.

The best way to do this is to make a compost heap. Haul out the muck and start a heap as large as you want. Spread the first loads over the whole surface about a foot deep. Then put on enough quicklime to make the whole surface white. If you can get good wood ashes, you may leave out the lime and use the ashes instead. Then put on more muck, more lime or ashes, and so build the pile up. In a short time, heat will start inside the pile, and the whole thing will be thoroughly fermented or "cooked." During the winter, you should fork the pile all over twice. Begin at one end and move the whole pile—throwing it back so that the whole is worked over.

But why not make the muck better than the manure while you are about it? Your manure would be much better if you could mix 100 pounds of bone and 30 pounds of muriate of potash with every ton, because then you would have more potash and phosphoric acid. The muck needs these substances more than the manure does. If wood ashes are to be obtained, use all you can afford—you can't use too much—and mix them thoroughly with the muck. The lime in the ashes will answer for "sweetening" the muck. If you cannot obtain ashes, use the lime alone, and as the pile is made up, use two parts of fine ground bone and one part muriate of potash, so that about 40 pounds of the mixture will be added to each ton of muck. If this be well mixed and worked over, you will certainly have a pile of compost of better quality, ton for ton, than good stable manure.—Rural New Yorker.

The Persimmon.

This is a fruit that I deem deserving more attention than has been given it up to this time. The large Japanese varieties we cannot grow in this latitude; but we have hardy natives which do not grow as large as the foreign, but are higher flavored. This latter has been conceded by many fruit growers. For three years in succession the fruit crops around here have been poor, with the exception of the persimmon which never fails. I have been collecting the best I could find for years, and now have six select varieties. Some commence to ripen in August and are all gone when frost comes; others sometimes hang on the trees until after mid-winter. I have a tree just now with at least two bushels on it. This is not a large one but of excellent quality. The aim is to get as large a fruit as possible (I have had them six inches in circumference) with few seeds, and of good quality. I have all four Kansas that have but few seeds; large and luxurious, ripening during September. The largest I have is the Marion, which has but few seeds. In counting the seeds in eleven specimens there were but fifteen seeds. They are different forms and colors and also differ greatly in quality. From observation I am inclined to believe they commence bearing in six to eight years from seed. They grow as readily as any kind of seed put into the ground. Put in in the fall and covered an inch deep.

There are more people in the country who never saw a persimmon than that have, I believe. The passengers on the railroad, along here have sometimes to wait until another train passes, and while on the side track waiting they flock to a persimmon tree and club them down, many stating that they never heard of this fruit before. One conductor said he would give $100 if he could have a tree like that in his yard. Another had us put some up for him to send North where such a fruit is unknown. To save useless correspondence will state that I have no trees for sale. Seeds I have been sending all over the country. Occasionally we come across a tree that bears a nice blossom, but has no fruit; such was the seedling upon which I grafted the St. Thomas, one of the best, and it is the tree that the conductor referred to. My only success in grafting has been by the crown system; cleft system failed. Have recently learned that they can be budded early in the summer successfully.—S. Miller.

Gooseberries in Canada.

Written for Green's Fruit Grower by Specialist in Gooseberry Culture.

I am fully persuaded that the gooseberry when it becomes as well known here as in Britain will be as highly valued as it is there.

Taking the number of articles that have appeared from year to year in our horticultural papers as a true index of the popularity of any variety of fruit we note that though in the past the gooseberry received but little attention it is now growing in favor.

That the gooseberry has real merit is proved by the high estimation in which it is held in Britain.

The popularity of this fruit in Britain cannot be accounted for from mere habit or custom nor yet the inability of the people to get other fruit. For they not only grow all the other varieties of small fruit, but their merchant ships for return cargoes bring to them, cheap, the fruits of every climate under the sun.

As we have cooking apples and eating apples so they have cooking and eating gooseberries. We in America seem to have got the impression that all English gooseberries are large. No doubt nearly all the varieties sent out here are noted for their great size, but whether they are the most suitable or not is another question. I am informed by old country people that the berries used for cooking there are generally not much larger than our Pearl or Champion. That we may have an idea of the relative size of these berries I give the weight of a dozen berries of each; Downing one and one-half ounces, Champion one and two-thirds ounces, Pearl one and three-fourths ounces. Now I don't imagine that the small berries are preferred for cooking in the old country because they are small, but because they are cheaper. This would imply that the smaller varieties are more prolific than the larger and I have no doubt that this is the case and if more prolific we can safely conclude more vigorous. Want of vigor is a serious obstacle to acclimatizing the large foreign varieties here. It, I am certain, makes them more liable to be attacked by mildew and they won't grow wood enough to yield big crops and this want of vigor renders our renewing system almost impossible with them. Of course old country people tell us that these varieties gave big crops in the old country but the bushes upon which the big crops grow are very large and very old—sometimes 50 years old—and the wood has never been renewed, owing to their long, slow season. Our hybridists have so far evidently been aiming to produce a berry as large as the largest English, so called, and as productive as Pearl or Champion. Fruit growers with whom I have corresponded upon this subject say they are waiting for such a berry to appear when they will plant extensively. But if I read the condition of the British trade correctly and the testimony of the people is reliable, great size is only gained at the expense of productiveness. This would be all right if we had the special market for them as the English have at special prices.

But the demand here, so far, is for cooking only, for which a medium sized berry, say two and one-fourth ounce per dozen is just as valuable as a very large one. But we are a fruit-eating people, as shown by our yearly banana bill and there is no reason in the world that we, like our forefathers, shall not use the gooseberry as they do.

The reason no doubt that our forefathers did not bring this custom here with them was their inability to grow suitable varieties for the purpose on account of their disposition to mildew. But now that spraying has solved this problem and we can now raise those fine varieties, the equal of which we cannot hope to produce from our native varieties for years to come, but we can produce a cooking berry—if it don't already exist—possessing good size and productiveness. Why shall we not use those large English, pure, with which to regenerate this old custom? To do this growers must not or need not wait for the demand before taking steps to supply it. They must create the demand and to do this these berries must be allowed to ripen and be exposed for sale, the people must be induced to try them.

A few years ago, here, canning gooseberries was a lost art, if it ever existed. I prevailed upon a few to try a basket just when the seeds began to color with the result that the following year these all came early and left orders for a basket and often two with orders from their neighbors. In a short time it was not possible to supply the demand. All this without going from home. And I had to send many away empty. I then gave up growing fruit for nursery stock and every season numerous inquiries came in for fruit still. I have decided this year to ask permission of several large hotels in the neighboring towns to put large, ripe gooseberries upon their table as dessert. It is noticeable how important we English regard very late and early varieties as it prolongs the season. For canning purposes this would not signify as this work could all be done up in a short time.

Of the fifty-two varieties imported from England last spring for the station one gives evidence of wonderful vigor. This is a point that many of the old, imported varieties were lacking in and indeed I for one had concluded that all English varieties were similar in this respect owing to their long, slow climate. But I am disagreeably surprised in this variety as it is more vigorous than even Downing apparently. It is called "Green Chisel." Certainly the first year leaves many points yet in the dark. Still without vigor all other excellencies are very little use.—Stanley Spillett, Experiments, South Simcoe Sub Station, Canada.

Bright Future for the Fruit Growers.

President Hobbs, of the Indiana Horticultural Society, believes that the day of extravagant prices for fruit has passed, never to return. Unusually low prices ruled this year, he says, because spring opened simultaneously over a wide range of country, and because all kinds of fruit bore liberally. But he looks for a long period during which the happy conditions will prevail of plenty of fruit at reasonable prices for the consumer, and at remunerative prices for the producer. The seasonable price to the consumer, he says, is brought about by the cheapened methods of growing and handling, in the cheaper transporation; while the grower is to profit through wider markets, and the aid to be rendered in the distribution of fruit by the American Fruit Growers' Union, recently organized. It is the purpose of this union to keep thoroughly informed as to the exact condition of the market and so control the shipping as to prevent overstocking the markets and breaking them down. "It would seem," Mr. Hobbs concludes, "that the energetic, intelligent fruit grower has as bright a future before him as anyone who tills the soil."

Electricity Kills The Trees.

In France great care is taken in locating the wires that carry high-tension electric currents, whether used for light or for power, but in America the thing is done more simply. No one bothers himself about what is to be found at the side of the wire, and it passes among the branches of the trees and across thickets, unconscious of the damage that it may do. Now in many towns, says the Cosmos, it has been observed that the trees in the current dwindle and die. It has also been observed that the death of the trees invariably follows the rainy season; the leaves being then soaked with moisture, become good conductors, and lead the current down into the tree from the wire. The wires, to be sure, have been insulated, but the protective layer has been quickly destroyed by the friction of the branches and the line becomes bare, producing thus results that it would have been well to avoid. And the electricity is the only thing that can be accused of this. It suffices, to convince oneself, to compare the condition of the trees traversed by wires with that of neighboring trees. It has often been noticed that in a storm all the trees through which wires pass die in a few hours, while the surrounding ones are not touched. This is a very serious source of complaint, and causes some lawsuits.

Popular Science.

—Our sun is but one of thousands of others of equal or greater magnitude.

—The light of the moon is only about one-six hundred thousandth that of the sun.

—Wind power is derived from the unequal heating of various portions of the earth by the sun's rays.

—Astronomers say that there is every reason to believe that human life on Mars is much like it is on this earth.

—The greatest depth, writes Prof. Seeley in his "Story of the Earth," at which earthquakes are known to originate is about thirty miles. It has also been calculated that a heat sufficient to melt granite might occur at about the same depth.

—A Hamburg young man has just had his sanity proved by the Roentgen rays. He declared ten years ago that he had a bullet in his head, which he had fired into it in trying to commit suicide. He complained of the pain, and, as he attacked his keepers, and the doctors could find no trace of a wound, was locked up as a dangerous lunatic. The Roentgen rays have now shown the exact place of the bullet.

—A novel disposition of sewage is made at Exeter, England, according to London Machinery. The method consists of four tanks, a fourth of the sewage passing into each. Light and air are excluded from the tanks; putrefaction and decomposition are rapidly set up; the microbes multiply and the solid portions of the sewage are consumed and the outflow from the tanks in passing through filters loses all color and taste. No chemical is used and no attention to the tanks of any sort is needed. Each filter bed automatically cleanses itself by being out of use for a short time.

It surprised many visitors to the Chicago World's Fair to find that of all the blood-purifiers, Ayer's Sarsaparilla was the only one on exhibition. The reason is that Ayer's Sarsaparilla is a standard remedy, and not a patent medicine, or secret nostrum.

REPORT OF THE W. N. Y. HORTICULTURAL MEETING.

Forty-first Annual Session Held at Rochester, N. Y., January 27, 1897.

(Reported by Chas. A. Green for Green's Fruit Grower.)

This is one of the older and more influential of all of the Horticultural Associations in this country. Like all good things, it had a small beginning when fruit growing was of small importance compared with the interest taken at this date, but its growth has been in proportion to the interest taken in this great industry.

It is conceded by fruit men of every State and Territory that the horticulturists of Western New York are not excelled by those of any locality in practical knowledge along the lines of their calling. This is partly owing to the fact that this locality was the first to engage in commercial planting of berry-fields, vineyards and orchards. At one time it was thought that Western New York was about the only part of the country suitable to the various lines of fruit culture. Gradually it came to be understood that Michigan, Ohio and Pennsylvania would also give good results, but the great West and Northwest was, at that time, thought to be outside of the fruit growing territory.

Perhaps Green's Fruit Grower has done as much as any one agency in carrying the fruit growing industry into distant States and Territories. This publication has been in the habit of offering premiums of trees and plants by mail, costing the planter nothing, the items being delivered free at their post-office. Owing to this privilege people located hundreds of miles from any express, or freight, office have received peach trees, or other nursery products and have planted them with little hope that they would succeed. But to their astonishment this fruit has succeeded in every locality beyond their expectations, and have led to the planting of thousands of acres of orchards, which have given marvelous results. This small beginning has opened up such territories as the Ozark range of the Pecos valley, and hundreds of other localities, which previously had not been thought of as possible for fruit growing.

The influence of our Western New York Horticultural Society is not confined to those who attend the meetings and listen to addresses of the scientific and practical speakers. Reports of the meeting are published in the Annual Report and spread broadcast by the horticultural press is of far greater service. This paper has been among the first to publish the better part of the proceedings, and placing them before the fruit growers in every part of this continent.

One of the attractions of these meetings is always the exhibit of fruits. This year the Geneva Experiment Station has a notable exhibit of apples. This station has thirty-one hundred varieties of fruits in bearing, among which are hundreds of varieties of apples, hundreds of varieties of gooseberries, strawberries, and many other species. Among the apples which they exhibited at this meeting, which seemed to be of remarkable character, are the following: Wolfe River, large splashed with red, similar to Alexander; Fallawater, a large, yellow apple; Mother, large red apple, of medium size, fine quality—tree a slow grower; Jacob Sweet, a very large yellow apple, succeeding well in this and other States, of good quality; Rome Beauty; McIntosh Red, an apple originating at Prescott, Ontario, Canada, a hardy, long-keeping, valuable winter apple, with foliage somewhat liable to the apple scab fungus; Wagener, bright crimson, a large, magnificent, long-keeping winter apple of superior quality, tree a fair grower. It succeeds over a wide extent of country; Red Canada, a bright red apple resembling Baldwin a little in appearance but superior to the Baldwin in quality.

Mr. C. M. Huffren, of this city, exhibited plates of the Japan persimmon. These were bright red, and some of them as large as a large Baldwin apple. They were somewhat conical in form, flattened at the stem end. They are seedless, sweet and of fine quality. This persimmon is a great success in the Southern States, but is not hardy enough for Western New York. This variety indicates the possibility of our American persimmon, which may possibly be bred to equal the Japan in size and quality, and in being also seedless.

PROF. JORDAN,

Director of the Geneva Experiment Station, is an excellent offhand speaker, evidently full of enthusiasm for his work. He is a new man at this station, having recently been elected to take the place of the retiring director, Dr. Collier. He said the station was often asked to direct farmers and fruit growers how to make money. This was something he could not succeed in. In order to do this it would be necessary that he should begin with future generations, and breed up a race of money makers. Money making is somewhat an inherited tendency. It is a science. It is only about one man in ten thousand who is an expert money maker. Some men will succeed by the side of others who fail under precisely the same circumstances and conditions. It is a question of wise economy; often a question of expenditure rather than that of withholding expenditure. It is a matter of self-denial, of industry, of close application, and particularly of working with the head at the same time that you work with your hands. No man ever made a great success financially by working with his hands alone. Both hands and head should be occupied, but of the two the head is of the greatest value. Many people begin life by working for others. This leads to the cultivation of hands rather than head; therefore, if a man has worked by the month for ten or fifteen years, and then starts for himself, he is not apt to use his head enough, since his work on the farm by the month has not tended to increase his capacity for thinking.

THE FERTILIZER TRADE

Was discussed by Prof. Jordan. The Geneva Experiment Station has been obliged to register one hundred and twenty-six factories making fertilizers sold under eleven hundred and twenty-six names. All of these eleven hundred and twenty-six brands are composed of only three ingredients. Therefore, it might be said that a fertilizer company having three bins, one filled with nitrogen, the other phosphoric acid, the other with potash, might make the eleven hundred and twenty-six mixtures to confuse and disturb the peace of mind of the planter. This many names are given for the purpose of increasing trade. There are fertilizers for cabbages, for onions, for strawberries, for peaches, for grapes, for nuts, for wheat, corn; in fact, a fertilizer for almost everything that grows.

Another important question for this station has been the question of feeds and rations. There are dealers and manufacturers of this class of goods who sell bags, consisting of oil-meal, bran and salt, and some other simple but harmless mixture, under the name of some fancy product for ten times the value of the contents.

He hoped the time would come when the station could take up the question of seeds sold in New York State. There are at the present time great adulteration in seeds, old seeds being mixed with new. The seeds of weeds are often conveyed in garden and field seeds and spread broadcast over the country.

The station has been very successful in fighting the mildew of the cucumber. The station issues at intervals bulletins on various subjects, which may be secured by application.

There is a new bacterial disease of cabbage, which is now being investigated at the station.

There are in New York four hundred thousand farmers, among which only twenty-five thousand have asked for the bulletin of our Geneva Experiment Station, although it has been announced widely that every farmer can secure it by sending a postal card for it. This indicates that possibly there are only twenty-five thousand live farmers in this State out of four hundred thousand. This is not surprising when we remember that not one farmer in fifty subscribes for a farm or horticultural journal of any kind the country over.

The station has recently issued a bulletin on gooseberry culture, which will be sent to any address on application.

Prof. Jordan said that this was a scientific age, an age in which every department of human affairs was being placed upon a scientific basis; that is upon the basis of facts absolutely. In the past we have been governed by speculations and opinions in regard to religion, in regard to the science of health, and every department, as well as that of horticulture. Now, we are getting down to plain, hard facts. There are specialists in every department who devote their entire lives to the study of one particular branch, and are able to give positive information.

PROF. LAZENBY,

Of the Ohio Experiment Station, formerly of New York Experiment Station, read a paper on "Fruit as a Diet." He did not believe in prescribing fruit, or in eating fruit as a medicine. He is aware that fruit possesses medicinal qualifications. Fruits, particularly the acid fruits, are disinfectants. They disinfect the mouth, which is liable to be filled with bacteria. They disinfect the system, which renders it less liable to attacks of disease; but we should eat fruit because it tastes good, and eat that which tastes best. Nature guides us by our taste. If our system desires acids, we will have a desire to eat that which is acid.

Nothing is more needed in the horticultural world, and elsewhere as intellectual work. The better a man thinks, the better he works. Horticultural knowledge through the masses of the people is still at a low ebb. Surely we have made more progress than in past years, and yet how slowly the work progresses in comparison with what it might were the intellectual activities of the people greater.

J. S. Woodward spoke of the varieties of apples he would recommend. He said what all have to say on this subject, that no man can instruct other people on different soils and locations what varieties that man should plant. With him the Maiden's Blush had been one of the most valuable varieties, but near by him, on soil of different character it did not do nearly as well. His soil is a clayey subsoil. It will keep well for a fall apple. Duchess is also a very valuable apple, but will not keep so well and must be sold quick after gathering. Hubbardston was a good early winter apple, one of the best, but would not endure shipment so well as some others. It is in good condition for eating up to January 15th. It will not do to export the Hubardston. It is not hardy enough, or tough enough skinned. We must supply the markets, especially the European markets, with apples and other fruits of the finest quality if we are to succeed. There must be no such fruit as Ben Davis, or Kieffer pear sent to the people of Europe.

Prof. Lazenby said that the Lady apple had sold this winter in New York at $8.00 per barrel.

"Yes," replied Mr. Woodard, "but it requires eight trees of Lady apples to secure one barrel of fruit."

S. D. Willard recommended for commercial orchards, McIntosh red apple. He would plant fall apples. Alexander is good but drops. Select varieties that have a vigorous, leathery foliage, which require no spraying. Longfield is valuable in this respect, having a model leaf. Longfield is valuable, very handsome, and large, but must be handled carefully and shipped in boxes rather than barrels. Where the Longfield and Baldwin were growing upon the same tree, the leaves of the Longfield had no fungus, while Baldwin was infested. He had sold Longfield at 90c. per peck baskets (probably in other seasons).

Princess Louise was spoken of as a valuable light colored apple from Grimsby, Ontario. It has a good resistant leaf, and a good keeper. One of the latest winter apples.

The question was asked, what are the indications of a crop of apples for next year. Mr. Wood, of Wayne County, said he found no blossom buds except on Twenty Ounce, King and Roxbury Russet.

The question was asked how to keep peach trees from breaking down with loads of fruit. Mr. Woodard said that those people who are so greedy as to allow their trees to thus overbear ought not to have trees, and yet a member said that Mr. Woodard's apple orchard was badly broken down with its over burden of apples. Other members recommended thinning and pruning. The writer has recently heard the practice recommended of cutting back a portion of each peach tree every year severely when out of leaf; that is, back to within a few feet of the crotch of the main branches, and thus renewing a portion of the tree every year. This method would thin the fruit, reduce the load and make the tree self-supporting. Members present advised cherry pruning the first three or four years. The tendency of the growth of peach trees is to spread out and the fruit be borne on the tips of the branches, which makes the burden very serious.

It was stated that an Ohio nursery firm had agents out selling peach trees, with the promise that they would plant them, and prune them so that they would not be affected with the yellows. Since none of the members present knew of the method of pruning peach trees to prevent yellows, it seemed to be the opinion that this offer was not made in good faith.

Prof. Lowe, of the Geneva Experiment Station, was asked how to destroy canker worm in orchards. This is a small worm about one-fourth of an inch long, which may be seen hanging beneath the trees from weblike threads. The reply was that orchardists usually do not begin to spray their trees until the canker worm had eaten off a large portion of the foliage. This worm works very rapidly, and often the first intimation the farmer has of its presence is the absence of leaves from the trees. If the worms are discovered when they first begin working, it is very easy to destroy them by spraying with Paris green in solution. There are some poor samples of Paris green sold in the various parts of the country. The New York Station has tested some samples which had forty per cent. of adulteration. A good test of the purity of Paris green is to dissolve it in aqua ammonia. If all the Paris green dissolves it is a good evidence that it is pure. But if there is a portion which does not dissolve, it is evident that that portion is impure.

LANDSCAPE GARDENING.

Mr. E. E. Long, formerly editor and publisher of Popular Gardening, read a paper on "Beautifying Home Grounds." He said if any one would travel about the country visiting our farmers' homes, he would be convinced that our people do not appreciate the value of ornamenting their surroundings. A large portion of our farm homes look bleak, barren and desolate. There are no vines about the porches, nor fruit or shade trees on the grounds surrounding the house. If there are such trees they are placed too close to the house, and are thus a detriment rather than an advantage. How easy to beautify an acre or less, of ground about the farm house by planting maple, elm or the poplar. To these may be added the clematis, evergreens, and the various shrubs, if the farmer's purse will admit. A bed of roses is an attractive sight, and is not expensive. The poplar is one of the most striking of all ornamentals, owing to its tall upright growth. It is a rapid grower, and should not be overlooked. By heading back the poplar every year, it can be retained in any form desired.

THINNING FRUITS.

Prof. Beech, of Geneva, New York Experiment Station, gave an interesting talk on "Thinning Fruits." He said the stock in trade of the tree was stored up during the growing season of the previous year, to be expended in foliage, growth and fruit the succeeding year. Self preservation is the rule with plants and trees the same as with man, and other animals, hence the first duty of the tree is to protect itself. To this end the tree uses its store of nutriment first for its own growth and protection. Whatever amount of nutriment is left after self-protection has been attended to, the tree gives to the production of fruit; therefore, it seems plain that a tree with liberal feeding in the way of fertilizers will yield more marketable fruit than a tree that is half starved.

This seems to be contrary to experience, since we know a tree which has had its bark gnawed off by rabbits, or which has been injured by fire, or has had its roots cut partially off, or destroyed seriously, will form fruit buds more freely and at a younger age than a rapid growing tree. But this injured tree, bear in mind, will not produce marketable fruits in this condition, and marketable fruits are what we are all after.

The question of thinning fruits cannot be discussed too often, and should receive the serious attention of every fruit grower. We all know the difficulties in the pathway of this much desired object. Labor in this country costs much money. We are not sure that the price for this fruit will be a profitable one. Though the trees may blossom and set fruit, we are not certain that should we thin out half, the remainder will continue to remain on the tree until perfected. Possibly insects may destroy it, or it may rot, or the winds may blow it off. For this and many other reasons, the thinning of fruit is almost universally neglected, and when it does receive attention not half enough of the fruit is removed.

There is no doubt, however, in the minds of the best informed that the thinning of fruit is in the highest degree a profitable expenditure of time and money. There is never a surplus of the finest grade of apples, pears and other fruits. The present season has been one of the greatest supply of apples ever known in the history of this country, and yet strictly fancy fruit, every specimen of which could be sold upon the fruit stand, has commanded a profitable price. Supposing one-half of the apples of every orchard in the country had been removed when the size of a plum, or smaller. This would have made all of the fruit of a superior character, larger in size, finer in color and better in quality. It would also have reduced somewhat the bulk, but would not have reduced the bulk so much as many supposed, since where a number of the apples would have been reduced the size would have been increased. It is safe to say that double the profit would have been secured from the apple crop this year had this course been pursued. But this is not the only gain, nor the greatest gain. If the trees had been properly thinned of the fruit the past season, they would have blossomed and borne a crop of fruit next year, when apples will probably be very scarce and high priced. Bear in mind that the reason why apple trees do not bear every year is that they exhaust themselves of their store of vitality in the bearing year, and have not the capacity for producing fruit the next year. While it is granted that the expense of thinning is considerable, amounting in some cases to an extra picking, but it should be remembered that it requires about half the time to gather the large and superior fruit which remains.

We are lacking in experience on the subject how to thin fruit. It should be done largely by children, but you may ask, Will a child know a poor specimen and remove only the poorest? Yes, if you do not think your boys know a good apple from a poor one, offer them a plate of fruit and see which they will select for their own eating. In thinning apples, and many other fruits, a platform on a wagon the central portion elevated, and ladders, will enable a number to work upon the same platform on the same tree. An active child should be able to clip out as many apples as a strong man.

In the case of plums, if the trees were properly thinned plum rot would not be so prevalent. Where the trees are loaded, one plum being pressed upon another in ropes of solid fruit, one decayed plum carries the contagion to its companion spreading throughout the entire tree; whereas if half the fruit had been removed there would be no contact. The same will apply to peaches.

All fruit growers have noticed that the lower branches of apple trees do not furnish as large highly colored and fine quality fruit, as the upper branches. Some might say, then prune away the lower branches, but if you did this you would continue to have some branches lower than others, and would hardly correct the difficulty. The tendency of sap in trees is to flow upward rather than sidewise, hence the fruit of the upright branches receive, not only a large supply of sunshine and ventilation, but receive a larger supply of sap and nutriment, hence they are of superior size and quality. It would be a good plan, however, to remove the fruit from the lower branches early in the season, in which case the foliage of the lower branches will give the fruit of the upper branches a new supply.

Another disastrous cause of over-bearing fruit trees, and a lack of thinning, is that the trees are often broken down by the weight of fruit and permanently damaged. This has been the case the past season with apple and peach orchards.

Prof. Beech alluded to the fact that in California Chinamen were employed in large numbers at one dollar per day to thin peach trees. Each man thinned ten trees per day, which cost from 10c. to 12c. per tree. Apples thinned cost about the same price. The price received for one barrel of apples properly thinned at an early date, paid for the cost of thinning the entire tree. The superior price received for one basket of peaches properly thinned on the tree far more than paid for thinning the fruit of the entire tree. These California peaches thus thinned attain extraordinary size, and beauty, as to command 5c. each upon the fruit stand, while at the same moment inferior peaches not thinned sold at five for 1c.

Prof. Beech alluded to the fact that the Editor of Green's Fruit Grower had spoken of his experiment in removing large portions of the heavy apple crop the past season, by raking off with an iron-toothed rake when the fruit was one-third grown in July or August. Of course the fruit should have been removed earlier than this date, and this plan could be recommended only where proper thinning had been neglected. Mr. Green's experience, however, was that the apples could be thinned by raking off in this way without marring or injuring the fruit which remained, but in raking off you could not discriminate between good and bad fruit. You could only rake off from the lower branches where the fruit naturally would be poor, and where it in fact should be raked off almost entirely if the tree was heavily laden.

S. D. Willard remarked here that if every other row of apple trees had had the fruit entirely raked off the past season farmers would have made more money, since the fruit crop for 1896 would have been reduced one-half, and more money would have been received from it, and the trees from which the fruit had been removed would have yielded a good crop for 1897 when prices will be high.

Prof. Beech was asked to explain the nature and cause of the spot which sometimes appears on the Baldwin apple. He said it was not a fungus. He did not know what it was.

He was shown an apple taken from cold storage, which was not in a healthy condition. He would not explain fully what was the trouble.

Prof. Waite had examined the apple, and had found that the cells were disintegrating, and that the trouble was from this source. The cause of the damage was moisture, hence the necessity of keeping apples dry in cold storage.

S. D. Willard called attention to the well known fact, so often presented, that it is the seeds of fruit which exhaust the tree, hence here is one great gain in thinning, since a large apple or a large peach has no more seeds than a small one, and if half the fruit has been removed, half the strain in producing seed has been removed.

A member stated that he had picked off one-half of his crop of apples, and by this method had saved in picking, and had sold his crop at $1.35 per barrel, which was above the regular market rate. The thinning also enabling him to secure a crop every year. He has marketed 1,000 barrels per year from 400 trees for four years in succession. Another member said he did not thin his fruit, but he secured large and fine fruit by manuring his orchard. He piled the manure around the trunk of the tree. He said he was laughed at by many people for this course. Prof. Roberts had said to him that he would as soon as pile oats around the legs of his horse to feed him as he would pile manure around the trunk of a tree to feed the tree. This member considered himself the only member of the Society who knew how to properly manure a tree. He said results proved the value of the method. He said he found that small apples kept much better than large apples, he did not, therefore, consider the growing of the largest apples was the most advantageous.

In summing up the whole question, the Editor of Green's Fruit Grower asks why it is that while it is conceded that thinning

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HORTICULTURAL MEETING CONTINUED.

of fruit is profitable and desirable so few practice it. Possibly for the reason that few are professional fruit growers. With us in the Eastern and Middle States fruit growing is simply a side-issue. Our minds and our time are occupied with other pursuits. Our fruit crops, as we manage them, cost us but little. If we get a fruit crop, we pocket the proceeds and are thankful. If we get no crop we say to ourselves, we are not out of pocket and we can stand the loss. Fruit growing, to be made eminently successful, must be made a specialty. When it is necessary to thin our fruit, we must have no haying, harvesting, or other outside work to interfere with the thinning. We must be able to give that attention. It is the same in every pursuit. Take the question of poultry. Farmers generally give their poultry poor management. Why? Because it is a side issue, and not one upon which they rely largely for revenue. Their fowls are kept in buildings through which the wind blows and the snow drifts. The fowls are in a half frozen condition for three months of the year. When eggs are highest priced they have none to sell. Poultrymen who make poultry a business, make money out of it. Farmers who do not make it a business probably lose money by it.

COMMERCIAL FERTILIZERS.

Prof. Van Slyke, of our Geneva New York Experiment Station, said that there were too many patent medicine fertilizers upon the market. By the name "patent medicine" he referred to those fertilizers selling under such names as "natural plant food," claimed to accomplish that which no other fertilizer would accomplish. This is all "bosh." All fertilizers, barnyard manure, as well as those sold under the name of fertilizers are composed of nitrogen, phosphoric acid and potash. In one sense these are all natural plant foods. Surely the Almighty can produce a fertilizer better adapted to plants than man can, but who has such a fertilizer as is made by the Creator for sale? He said there were twelve kinds of bone advertised by manufacturers of fertilizers under the name of dissolved bone, electrice bone, soluble bone, and other like names. He considered the phosphoric acid secured from rock phosphate just as valuable as any, but many manufacturers were holding forth that only bone phosphate is valuable and theirs was entirely from that source.

A NOTABLE FARMER.

We have in Western New York a peculiar farmer who has become somewhat well known. Perhaps there are readers of this paper who have heard of him. He has many original ideas connected with farming and farm crops, and has been led into the practice of telling about his work. I have heard of his being invited to various portions of the State to tell how he secures large crops, and what his views are on plant growth, mulching, drainage, fertilizing, etc. I speak of this because thinking farmers are not so plentiful as we would desire. I am sure that this man works with his head more than with his hands, and finds the results more profitable. I saw this man recently and said to him: "You are one of the best farmers we have." He seemed to feel complimented by the remark. His name is I. B. Roberts. Possibly you have heard of him. Some people call him Prof. Roberts. His farm is located near Ithaca, New York. I have known him to instruct the students of Cornell University at intervals, which is done in a very acceptable manner.

Well, this notable farmer had something to say at our Horticultural meeting. The queer idea he is possessed with is that plants need moisture more than additional fertility. He is such a funny man. He believes in going out into the fields and asking the plants what they want. Just as though the plant had ears to hear with and mouth with which to speak. His plants say to him, "We are dry, give us a drink," and he gives them a drink. He does not flood the fields with water, but gives them moisture by continual cultivation long after surrounding farmers have discontinued cultivation. Last year he planted a gravelly field to potatoes, not check rows, but in continuous rows. He divided this field into various lots, applied no fertilizer and kept a record as to how many times each plat was cultivated. Some were cultivated five, seven, ten, eleven or twelve times during the season. He kept the ground level believing any ridging of the soil was to remove moisture rather than to add to it. As the vines increased in size he narrowed the cultivator, considering the vines themselves a mulch so far as they extended. He did not desire to mutilate the roots; therefore, at the last two cultivations the cultivator was not wider than 12 to 18 inches. He calculates by continuous cultivation to greatly increase the capacity of the soil to bring up moisture from beneath. This loose soil made by the cultivator he calls a mulch. He claims we cannot grow large crops of potatoes, or other plants without having the soil mulched, and that no mulch is so good as a mulch of loose earth. By talking to his potato plants he has learned that they like acid soil, hence it is desirable to plow under green crops such as rye or clover on fields intended to be planted to potatoes. His soil being a gravelly soil did not contain so much fertility as an ordinary soil, and yet he secured from one acre three hundred marketable bushels of potatoes, whereas his neighbors, on equally good soil, received only fifty bushels of marketable potatoes; that is to say, he received on one acre what his neighbor would have to plant five acres to receive.

Prof. Roberts analyzes the soil in which these potatoes grew. He first sifted the gravelly from the fine soil, ground it, and analyzed the gravelly and the other soil separately. He found that the gravel contained about as much fertilizing material as the soil itself. He also found that many of the gravelly stones would crumble between the thumb and finger into fine dust.

Hence he concludes that a field of gravelly soil has in it the capacity to fertilize itself by the disintegrating of the particles of stone. The gravel was such as was brought here during the ice age from the North composed of almost every kind of rock. The fertility of the gravel, however, was largely insoluble.

Prof. Roberts said that we know very little about commercial fertilizers. We are told that insoluble phosphoric acid is worth 2c., and the soluble worth 6c. per pound, but we do not know this to be a fact. If a farmer could sell the potash phosphoric acid and nitrogen contained in every acre of fertile land upon his farm at the price asked for these products by the manufacturer, he could sell the product of each acre for from one to two thousand dollars. The soil upon an acre of land can be said to weigh two thousand tons. In response to an inquiry he said that he cut his potatoes so that two eyes would be upon each piece of potato, and that each piece was made of considerable size.

Prof. Jordan stated here that farmers have been buyers, and that in the future they must buy less and sell more. He referred to the sixty million dollars worth of phosphoric acid that farmers have bought to apply to their soil. A farmer who grows fifty tons of hay, fifty tons of ensilage, five acres of oats, two acres of potatoes takes out of the soil sixty thousand pounds of nitrogen, potash and phosphoric acid, each item, if he were to buy them of the fertilizer company, would cost him seven hundred and fifty dollars, or more than the products would amount to. The farmer buys nitrogen at 16c. per pound, when this same nitrogen equally as valuable is running out of his barnyard and going to waste.

Prof. Roberts remarked in concluding that agriculture was like religion, insomuch that every man must work out his own salvation. Preachers may preach, and instruct, but after all is said and done every man is to solve the problem for himself. We may attend these meetings, we may subscribe for farm and horticultural papers, but the result is with us alone. His advice is to rely upon tillage and moisture, rather than upon fertilizers. It does not mean by this that no fertilizers should be applied. The mistake was that many people applied fertilizers which cost large sums of money, and then withheld the necessary cultivation, relying upon the fertilizer. This was radically wrong. Many soils in New York State were fertile enough to produce good crops if properly cultivated.

The American Fruit Growers' Union.

A member of the Missouri Society was present. Owing to the fact that he was interested in the American Fruit Growers' Union, he was asked to address the meeting on the subject of the working of this Union. He said it was desirable each season to learn how much fruit of various kinds there was to market. The plan of the Union was to have each county of each State organized so that each county could report the amount of fruit to market. Thus, in other words, to keep the Union informed in regard to supply of fruit of various kinds. The great question is, how to market fruit with the least loss, and greatest profit. As fruit shipments are now made it is possible that a large portion of the apple growers or peach growers, or strawberry growers may be shipping carloads of fruit the same day to the same city, since no one man knows what the other is doing. The object of the Union is to distribute this fruit to different cities and thus prevent a glut at any one point. This plan could easily be adopted under the method proposed.

The Union has just started. Fruit Growers have seen something which could work the past season in keeping them informed in regard to the markets and prices. His object in speaking was to get fruit growers interested in the Union and to induce them to organize as before mentioned. He said there was one instance where seventeen carloads of strawberries were shipped in one day to one city. Had the Union plan been carried out these seventeen carloads would have been distributed to four, or five or more cities, and instead of loss resulted in good profit. His opinion was, had the immense apple crop of this season been properly distributed a good market for every barrel of apples would have resulted. There is no doubt whatever that he was right in this statement.

The object of this Union is to have agents in every prominent city of the United States to handle fruits and make sales. This method has been tried in California, where it has been a great success. It has also been tried in Germany, where it works successfully. Any fruit grower can join this Union. They will soon have a meeting and ask that a delegate be sent from every Horticultural society in every State.

On May 20, 1896, a meeting was held at the Palmer House, Chicago, and a national organization effected, with John D. Cunningham, Marietta, Ga., as president; Willis Brown, secretary and treasurer, No. 2 North State street, Chicago, Ill.

CANADIAN COMPETITION.

A resolution was offered calling attention to the fact that the Canadian Government imposed a tax upon the American products going into Canada, which was prohibitory; whereas Canada was free to ship into our market unlimited quantities of butter, eggs, fruits, machinery, grain and other products. The resolution called upon the society to send a committee to Washington to urge that a duty be placed upon American products in case reciprocity could not be secured.

This resolution called out animated discussions, which seemed to take a political turn, and became a little heated. At this point President Barry cautioned the society against attempting to do any other work except that of hearing the papers and discussing matters more closely relating to horticulture. Any political or other questions were liable to create dissensions and contention. Several speakers spoke of Canadian competition. There is far more wealth in America than in Canada. Here we have large and populous cities near the Canadian line. If an American desires to send an engine to Canada he must pay $300 duty. He cannot ship a tree or a box of fruit, or even take his gun or bicycle into Canada for a pleasure trip, without being demanded to halt and pay duty. American fruit growers in the large cities bordering the Canadian line who drive by night in order to reach the early morning market meet in the market Canadian fruit growers with loads of fruit which have crossed the lake by boat and have arrived as early, or earlier, than they have. These Canadian fruit growers are their fierce competitors for this trade. Not only this, but they carry home with them loads of manure to fertilize their fields on their trip.

The feeling seemed to be that Canada should not burden us with no duties on what we send into their country, and we should not burden them with duties on what they send into our country. In other words, reciprocity should prevail. But the resolution was withdrawn in respect to the wishes of the President.

It is a sad fact to contemplate that our Legislature at Washington are not farmers, or fruit growers. There is but one member of the Senate who could in any wise be classed as a farmer; in Congress I think not any. Hence these practical matters are overlooked. Take for instance the case of importation of bananas. Hundreds of ships loaded down to the water's edge with bananas are shipped into our ports, without duty, to compete with our strawberries, raspberries, peaches, apples and other fruits. Note when the early strawberries ripen there would be a dearth of fresh fruit in the market and strawberries would meet with a ready sale, but in recent years the banana has been so plentiful, and so cheap, as to greatly lower the price of fresh strawberries. The banana is a marvelous fruit. It is a nourishing fruit and exceedingly palatable; can be used on the table sliced like peaches, but surely American industries should be protected to a reasonable extent and where reciprocity is not possible to be secured we should tax other countries the same as they tax us.

About Peaches.

Supplementary Report of W. N. Y. Hort. Society made for Green's Fruit Grower by Mrs. A. C. Lewering.

Mr. Willard, being questioned as to his ideas in regard to the new varieties of peaches, said he thought there had been erroneous ideas as to the hardiness of the Crosby, though he was well pleased with its quality. He thought the Fitzgerald worthy of mention. He said that in various tests that had been made, it withstood frost better than most other varieties.

The question was asked if Mr. Willard would recommend the planting of an orchard of Crosbys, to which he replied that although it had done well the only year he had had it fruited, still he did not think any one ought to bank on the test of one season.

"The question of the hardiness of a peach is not well enough understood. I do not think that the Crawford peaches, or those of that especial type, can be banked upon to be grown profitably in this State. I think in Michigan they know a good deal more about peach growing than we do here. They have a Louis seedling there which is a very productive peach and is grown with great profit. There is also the Golden Drop and Kalamazoo, extremely fine for canning and hardy in the fruit bud."

Mr. Willard being requested to name some hardy peaches, said: "If I were to start on an early peach I would suggest what is known as the Hines' Surprise, a perfectly free-stone peach, and large and not disposed to rot easily. Then I would take the Louis Seedling, and as I said before, the Golden Drop and Kalamazoo, especially the latter, which has been demonstrated in the canning factory to be one of the finest canning peaches extant. I should not neglect the red checked Mellocatoon, a variety slightly known with us, and though a branch of the Crawford, it is twice as hardy. I don't believe we want too large a list of varieties. If you are near a canning factory, you cannot do much better than the Hill's Chili, as that far excels every other peach for the purpose. The Elberta is a choice canning peach, but we have not tested that here yet. It is a superior canning peach and will hold up ten days after it is picked.

The marketing of green apples in Great Britain, Germany, France and the Baltic country was discussed. There were said to be three great troubles in putting our fruit on foreign markets, or with the methods at present employed. First, we do not send the right varieties; second, we are not sufficiently careful in selecting the fruit; and third, the packing is not properly done.

The old question of dishonest packing arose in this connection. John Bull is finding that his American cousins put different apples in the middle of the barrel, from those on top and bottom, and he is becoming disgusted. This one thing is very rapidly spoiling our markets in England and elsewhere.

In regard to the varieties demanded by the European market, it was first stated what they did not want, viz., the Ben Davis, though the Baldwin and King are favorites. The Greening also is well liked when it can be transported, though being a soft apple it does not bear the long shipment. The Newtown Pippins brought from $12.00 to $17.00 a barrel in London, and they are especial favorites at this time of year owing to the fine condition in which they arrive; they command about the same price as Baldwins in good condition.

Mr. Willard championed the Ben Davis as follows: "For the last five years, in the cities of New York and Philadelphia, the Ben Davis apple has been selling at from twenty-five to fifty cents over the Baldwin. This last fall, it sold at fifty cents over the Baldwin. It is a better keeper than the Baldwin, and when the latter has melted down and gone out the Ben Davis is in good condition. It is a fine cooking apple, and it meets the wants of the people in certain directions."

The question of a wind-break for a pear orchard came up and it was decided that a wind-break was not advisable, unless the orchard was situated in a very exposed place, the wind being deemed necessary to drive away fungus, insects, etc.

Mr. Lown, of the New York State Experiment Station, gave as three of the most injurious insects which are now troubling the fruits of the country, the peach tree borer, the wolly aphis and the San Jose scale.

Dr. G. C. Caldwell, professor of chemistry at Cornell University, in his address, "Experiments in Fertilizing Fruits," alluded to the good results which might be obtained by farmers, if they were thoroughly acquainted with the latest chemical research and the greater degree of efficiency of their ground when properly treated.

He mentioned a very novel method of fertilization described in a recent German journal, the plant food instead of being put into the soil, is put in a hole in the tree, just above the ground, being fed by tubes connecting with a small galvanized iron tank. (This for satire.—Editor.)

As a fall manuring, he suggests the use of what he called "Basic Slab." This is a form of phosphate fertilizer which can be purchased at a very low price. It is now in very general use abroad, and Prof. Caldwell prophesied that that would sooner or later come into use in this country. There is at Troy a large manufactory where it can be purchased. It is very widely known in Germany, and as is very well known, things are more carefully inspected there than in most places, and only adopted when proven to be economical and advantageous.

In speaking of the value of crimson clover as a fertilizer, the question was asked how to make a uniform growth where land was dotted with hard knolls. The reply was that the application of a little stable manure on these hard spots would result in a fine growth of clover.

In reply to the question, "What five kinds of pears are best for market to cover fall and winter demands," the society decided upon the Anjou, Bartlett, Kieffer, Duchess, and Clairgeau.

Mr. S. A. Beech, of Geneva, said: The experiments mentioned in the paper were undertaken at the suggestion and under the direction of Mr. Willard. In these experiments great precautions were taken for the comparison of results from the different tests. In the first place, the trees employed in the test were divided into two different classes, those which were to be trimmed and others of the same kind, standing along side, which were to be left, for the purpose of comparison, untrimmed. In all instances, two trees were taken, of one variety and similarly located, one being subjected to thinning and the other left. After the trees were thus paired off three methods of thinning were employed.

With method No. 1, all wormy and knotty fruit was taken off, and all that was inferior in size or that had not been well pollenated. All such fruit was taken off, and the clusters thinned to one fruit.

With the second method the same process was repeated, leaving, however, no apples closer than four inches.

With the third method the same process was repeated, but no apples were left closer than six inches.

The sixteen trees included in the number experimented on, belonged to three varieties, the Greenings, Baldwins and Hubbardstons. The Baldwin and Greenings were 25 years old, the Hubbardstons thirty.

The Baldwins thinned according to the first method gave 16 per cent. less fruit, but 10 per cent. more first class fruit than the corresponding trees, unthinned.

The Baldwins, thinned to four inches apart, gave 22 per cent. more first class fruit. (We took off a little more than a quarter of the fruit and increased the yield of first class fruit almost a quarter.)

With the third method—this was tried entirely with the Hubbardston—we got 25 per cent. less fruit and 17 per cent. more first class fruit, than on the unthinned trees.

The Greenings were heavily loaded the previous year (1895) and so they set just a good, fair crop and did not need much thinning.

According to the second method—four inches apart—they gave 6 per cent. more fruit, and 10 per cent. more first class fruit than the corresponding trees, unthinned.

In all of these tests the picked fruit gave about a bushel of culls, with the thinned trees, as compared with three bushels of culls from the trees that were not thinned.

Where the fruit was thinned the drops were fewer and better and all grades of fruit were clearly superior in size and color.

This brings out an important matter which we would do well to consider, that the coloring of the fruit does not depend entirely on the amount of sun that strikes it. Here we had corresponding trees, and where we reduced the amount of demand on the plant food, we increased the amount of color, showing that the color is influenced to some extent at least, by the supply of food available for developing the fruit.

In sorting, the first grade included no apples less than 2 1-2 inches in diameter and the proportion which measured 2 1-2 inches was larger where the fruit was thinned, than where it was not, so that grade No. 2 from the trees thinned was much better than grade No. 2 from the trees not thinned.

The fruit has not yet been sold, but Mr. Wilson estimates that the fruit from the trees thinned would sell in the market for from 10 per cent. to 15 per cent. more than the fruit not thinned.

The second method of thinning (leaving no apples less than four inches in diameter) proved enough superior to the first method, leaving only one apple in the cluster) to more than pay for the cost of the extra labor. If you are going to thin at all, it pays to put in enough extra time to make a good job.

It is too early yet to say much about the effect of the thinning in this case on the crop for next season but the experiment has progressed far enough already to show a very marked improvement in the size, color and quality of the fruit, resulting from thinning overloaded trees.

While these results are remarkable, it cannot be claimed that they are surprising, or that experiments were necessary for the demonstration.

The question remaining to be determined is, whether it is possible to control the productive energies of the trees so that they will usually bear every year or every alternate year, and if so, whether the results, judged by a money value, will warrant the expense of the labor.

It is generally recognized that thinning peaches and pears makes a great deal of difference in the size and color of the fruit which remains, and there is no reason for supposing apples to be any exception to the rule. On the contrary, observation and experience teach that with apples, as with other fruits, the overloaded tree cannot mature so large an amount of large, finely colored fruit as one which bears a moderate crop, other conditions being the same.

The record of 1896 is poor prices and broken down trees. The prospect for 1897 is barren trees and good prices.

Is is not then, an open question whether thinning apples would help to prevent such conditions in the future? Would it not have been better if half of the second class apples and practically all of the culls had been taken from the trees in the first place? If this had been done throughout the apple growing section of the State half the second class apples grown in New York would have been marketed, the glut would have been avoided and prices maintained. The remaining crop would have been exceptionally fine and of material help in finding good markets in succeeding years. Having exceptional foliage in 1896, and a good growing season it is reasonable to expect that the thinned trees would have provided a good crop for the succeeding year.

Q. Did you keep any account, so that you know the price of ordinary day labor per bushel to thin those trees?

A. Yes, we kept account of all those things. We find it takes twice as long to thin in the best way—taking the thinning and picking together—as it does to simply pick the fruit. You have to go into the orchard twice, and it practically amounts to another picking, to go over the trees as we did. It seems to me that children, with a platform on a wagon with steps, that they could thin a large amount of the fruit that ought to come off in a comparatively short time and with little expense.

Q. Don't it require more judgment than children would be likely to have?

A. I think not, if directed by a competent man. A child can tell the difference between a good apple and a poor one, if you put a plate full before him.

Mr. Willard: It was through a consultation I had with Prof. Beech that we were led into this work. I believe it to be a practical line of work for our experiment station to take hold of, with a view of obtaining results which would determine whether or not thinning can be practiced with economy.

As a result of these experiments, what have we? I examined these trees before the fruit was taken off, last fall, very carefully, and came to this conclusion: In the first place we have an improvement in color and quality, and have probably, on those trees that were thinned down to six inches, a crop in sight for another year. It looks very much like it at least, so far as I am able to judge.

In addition to this, we have avoided the excess of tax upon those trees, resulting from the effort of nature to perfect the entire crop, and we all understand pretty well that it is nature's effort at reproduction—the development of these seeds—that makes the strain upon the tree, and that it takes out of the soil what it costs us money to put back.

So we see we have a positive gain in four directions, that makes it a practical question whether or not we are to thin our apple trees in the future. It would pay to go and get a manufacturer of rakes to make us some fine tooth rakes, and then to have taken every other row of these Baldwins, pulling the fruit off clean, and then reduced the crop on the remaining trees, one-half, for we would have had more money in our pockets than we have to-day and an average fruit crop in sight for another year.

Mr. J. D. Colmer, of Tilton, testified to the truth of Mr. Willard's statements and cited his own experience.

Q. How did you do the thinning?

A. I staid on the ground myself, and reached as far as I could and had two men go up on ladders, men who were accustomed to the work and could pick with both hands. We could have saved time and money if, when we trimmed the trees, we had done more of the thinning.

Green's Fruit Grower

A MONTHLY JOURNAL.

Devoted to Orchard, Garden, Poultry and Household,

CHARLES A. GREEN, Editor.

J. CLINTON PEET, Business Manager.

Price, 50 cents per year. Postage Free

Office, corner South and Highland Aves.

Rates for advertising space, made known on application. It is the intention of the publishers of Green's Fruit Grower to admit none but reliable advertisers. We lose fully $1,000 per year by refusing business from parties whose reliability might be questioned. We believe that all the advertisements in this paper are from reliable parties but if subscribers find any of them to be otherwise we will esteem it a favor if they will advise us. We will at any time give our personal attention to any complaints which we receive.

Entered at Rochester Post Office as second class mail matter.

ROCHESTER, N. Y., MARCH, 1897.

The circulation of GREEN'S FRUIT GROWER *is larger than any other horticultural paper published in America.*

EDITORIAL.

Please favor us by notifying us by postal card in case you are getting more than one copy of Green's Fruit Grower. This occurs now and then on account of similarity of names, etc. Kindly give this your attention and thus greatly aid us.

To Writers of Poetry.

Green's Fruit Grower has no use for poor poetry. We make this statement owing to the fact that we receive many verses for publication which are in no sense poetry, but simply rhymes and verse which have no measure. There are few people who can write poetry. Poetry consists of thoughts expressed in a figurative and imaginative manner. I have before me three pages of verse in which I cannot see the slightest suspicion of poetic thought or expression. If you have something to write and cannot express it poetically (that is, figuratively), you should write it in prose, but the three articles alluded to if put into prose would amount to nothing, since the incidents are not valuable enough to warrant publication.

We have heretofore, in some instances, published verses out of compassion for the writer rather than otherwise, but we cannot do it in the future; therefore, any person sending us verses can expect that if they are not genuine poetry they will go into the waste basket. Remember that no long poem will be published, not over four to six verses at most, in any case.

Limitations to Human Ability.

"While the proper study of mankind is man" how few study human nature with practical results. We deem it marvelous that certain people have ability to make money, while others seem only to have ability to lose it; that some have the ability to save money, while others have the ability to spend it. We marvel at the ability of one man to control large operations and a large number of men, while others have no faculty whatever along this line. We see certain men possessing executive ability, bringing about rapidly desired results in whatever they undertake, while others are entirely deficient in this qualification, and are as helpless as infants, and we ask why is this as it is? Why are people so weak and shortsighted, or lacking in judgment as not being able to save their money, or not be able to act judiciously in the management of those who work for them, or why do people make such poor bargains or waste their money on frivolities.

We are aware of the fact that often other people possess ability which we ourselves are lacking. We know there are men and women who can draw or paint beautiful pictures, true to life, while we would be entirely incompetent to compete with them. We know there are people gifted with eloquence, whereas we have not the slightest ability along this line. We know there are people who can write beautiful thoughts in poetry or prose, whereas we may utterly fail. We know there are mathematicians who can solve a difficult problem, whereas we may be entangled with those most simple. We know there are inventors whose peculiar minds reach out after inventions which startle and revolutionize the world, while our minds are utterly barren of such ideas. We know that some people are natural scholars, learning easily, often qualified to speak several languages in a short period, while we can with difficulty master our own.

Let it be understood then that the art of making money, the art of saving money, the art of managing men, the art of manipulating business enterprises, are all special endowments, are often inherited, the same as the faculty for drawing pictures, writing poetry, for oratory or invention.

Considering this view of the case, it is evident that "the poor ye shall always have with you," as the Bible says. There will always be those who are improvident by nature and who could not be made provident by all the schools and teachers in the world.

The North Pole Not Shifting.

(Written for Green's Fruit Grower.)

I am going to criticise a statement of yours (I suppose) in December Fruit Grower, on page four, where you say in the article, "Everything Changes," etc., that the ice age may have been caused by a change in the place of the pole. Were the earth a perfect globe this change, though very unlikely, might not be impossible, but you know the diameter of the equator is twenty-six miles greater than the distance from the pole to pole, and this form is said to be the exact figure of equilibrium which a globe of water, or any liquid, would assume if it had our period of rotation; a slower diurnal revolution giving less difference between the polar and equatorial diameter, a faster one more.

The immense momentum of the daily revolution would tend to make the equator and poles highly permanent even in case of a perfect globe, but this protuberant equation makes a shifting of the pole unthinkable; anything else almost would be easier than this. The procession of the equinoxes sends the poles of the earth in a circle round the pole of the ecliptic every 25.868 years, but this is very different from a shifting of the pole from one point of the earth's surface to another. We have to wait until the next glacial era to discover its true cause, if as some think the slow revolution of the place of the perihelion is what makes it, there will be another in about 12,000 years. But perhaps this movement has no effect. Possibly, extensive table lands high enough to carry some snow through the summer in Upper Canada, where all our glacial scratches originate, might have been sufficient. However it may have been caused, it is a wonderful story.

The shaly rock of Allegany county has preserved no glacial markings so far as I know, but there is an infinite quantity and a vast variety of boulders and pebbles from the Queen's Dominion, granites, gneisses, quartz and quartzites, etc., etc., together with fragments of lime-stone from the Corniferous and Niagara formations. The deep and extensive gravel beds along the Canaseraga Creek contain so much lime-stone from these beds that the rain water soaking through, and coming out below in springs, deposits a soft lime-stone (tufa), which years ago was burnt for sale. Many of the old houses hereabout were built with lime from this source, and there is still plenty of the stone, but for some reason lime comes now by rail from Buffalo or Rochester.

The fossil plants of the Miocene age buried in the rocks of Greenland and Spitzenberg are hardly tropical. One of the most Southern species is the Magnolia grandiflora, which does not altogether refuse to live in New Jersey, and Lyell remarks of this flora that low islands in the midst of a warm ocean current and therefore somewhat exempt from frost could have produced it without predicating a hot climate. Still the Miocene was a warm time, and palms grew in Colorado and Switzerland.—E. S. Gilbert, Canaseraga, N. Y.

Note.—I am glad to receive and to publish the above communication. It is pleasant to be reminded that Green's Fruit Grower is read by men of scientific attainments. I have been reminded of this fact often by receiving communications similar to this in reply to editorials which I have written on subjects on which I was not so well informed as are specialists along those particular lines. I do not claim to be a specialist in geology, but I am greatly interested in that science, and in my travels, or rambles, always study the rocks, hills, valleys and mountain sides.—Editor Green's Fruit Grower.

A Good Late Cherry Wanted.

A reader of Green's Fruit Grower asks for information as to the best reliable late cherry, equal in productiveness and reliability to Montmorency, but later, so as to prolong the season for marketing. Suda Hardy, Ostheim and Lutovka have been recommended. Will our readers give their experience?

A One Hundred Dollar Bicycle.

Who wants one? Who does not want one? Young and old, rich and poor, male and female, ride and whirl. All want a "bike" and all want the best. Green's Fruit Grower offers the best—A Columbia $100.00—highest grade bicycle. Here is the offer: The wheel will be given to the party who first sends us one hundred and sixty subscribers to Fruit Grower for one year (with premium of Green's Four Books) at 25c. for each subscriber, or to that party who sends us the largest number of subscribers by May 1st, if no one has previously sent us on this offer one hundred and sixty subscriptions. Notice we make a special price, viz., 25c. for paper and of Four Books for this large Club. If you desire to compete, please send us 10c. and we will send you the outfit and place your name on the list of competitors. Green's Fruit Grower, Rochester, N. Y.

Poorly Assorted Fruit.

It is evident that our California competitors succeed in marketing their products throughout the Eastern and Middle States through superior methods of grading and packing fruits. They have been taught the necessity of such care by the long distance it is necessary for them to ship their fruit, and the consequent expense. Eastern fruit growers have not been taught this important lesson, being nearer to the market, but it will be necessary that they should learn the best methods of assorting and packing to secure the best results.

I am led to these thoughts by my experience and observations this season. We have had an enormous crop of apples. I have been in the market and have examined the apples as barreled and assorted by the average farmer and fruit grower. I find that without scarcely an exception these apples are not properly assorted. In many instances farmers have placed in the barrels apples just as they came from the tree, without any assorting whatever. In other cases from four to eight quarts of apples of small size, or otherwise defected, have been put in with good apples, thus rendering the entire barrel unsalable, and beyond the possibility of grading as either good or bad.

During seasons of great scarcity these inferior apples will prove salable at some price, but during seasons of great plenty it is absolutely necessary that the fruit should be carefully graded and no inferior specimens placed in the barrel.

How does this poor packing affect the apple market? It prevents thousands of people from ordering any small or large lots. The apple crop this year was limited to a small section of country. Apples are wanted through the Southern and many of the Western and Northwestern States. But how are these distant people to order of a producer with the uncertainty as to grade. From past experience these would-be purchasers have learned that they could not rely upon the average grading of apples.

Having something of a reputation myself, I have this season received some very large and small orders from various sections for apples, the order being accompanied by cash. I have felt highly complimented by these orders. I have reason to believe they were sent to me because the people had confidence that the fruit I sent them would be of a good grade. In most cases people who have ordered fruit have duplicated their orders, and expressed themselves as well pleased.

The average commission house buys apples of promiscuous growers; therefore the grading of their apples cannot be depended upon, unless they have been repacked and are re-assorted.

The reader will see from these thoughts the restrictions which poor packing will place upon the demand for fruit.

I know of no remedy for this except in educating fruit growers on this subject, through the press, and through horticultural meetings, which will now be held in almost every State.

Many people who send money to publishers of papers, or magazines, or who send money for seeds, plants, or trees, and do not hear from these orders, or get any reply whatever, have only their own carelessness to charge with the blame. I have before me a letter, which requires an answer, and which simply states that she is the wife of Mr. Brown, assuming that we know who Mr. Brown is, and what his name is, with full particulars. Many people forget to sign their name to their letters, and others forget to give their post-office and State; therefore, whoever you are, if you do not receive replies, or if your orders have not received attention, write immediately, stating when you sent the order, with full particulars, giving your address and name in full.

Ask Your Friends if they intend to read Green's Fruit Grower this year

MY OLD NEIGHBORS.

The Hallocks.

No. 5.

Our homestead farm was divided from farms to the south of us by the Honeoye Creek. This stream in early days would be called a river in most localities, and could not be crossed except with a boat. In recent years the city of Rochester has tapped the beautiful lake which is the source of supply for Honeoye Creek, and has consumed all the water that used to pass through this beautiful channel. Directly across the creek from our old farm home lived three brothers by the name of Hallock. William, the elder, and two twin brothers, Jack and Jill. The Hallock home was located on the highest eminence in that locality, commanding a fine view in every direction. The farm embraced perhaps three hundred acres, which was a fine farm in that locality. My father, when a young man, and recently after his marriage, had owned this farm, and being able to sell it at an advance of one or two thousand dollars parted with it.

Nearly opposite our farm, on the opposite side of the creek, was the Hallock farm, and near by a heavy piece of woods where I occasionally went to hunt the partridge and squirrel. In these woods were immense trees, combined with thickets of under-brush, and wild grape vines that hung in festoons from tree to tree. So peculiar are the vagaries of the human mind, I always associate these woods with any entangled labyrinth described by travelers. When I read of Stanley's travels in darkest Africa, or of other forests in which travelers have struggled for months without scarcely seeing the sunshine, in imagination I picture these men roving through this dense Hallock forest. When I read of the Austrian aborigines, or the Pigmy races of Africa living entirely in forests, I always imagine them to be in this part of Hallock's woods. When people read of these things I suppose they have to picture in their minds something which is the nearest to that which is described that they have seen. At least, this is peculiar to myself.

A stump lot adjoining these woods, to the west, was a very productive field of wild blackberries for many years. The Honeoye Creek winding in and out formed numerous small bays and eddies along the Hallock farm, and made the border a favorite hunting ground for ducks, muskrats and other game. There was one point midway of the Hallock farm, where during very dry weather the Honeoye Creek could be forded, the water at the deepest point being only about three feet deep. Whenever I read of the children of Israel passing over the Red Sea, the opposite side of the creek on the Hallock farm is the spot where they descended into the water (in my imagination).

The Hallock farm was bordered to the east by a high plateau, known as the plains, a peculiar stretch of very fertile land embracing perhaps 1,000 acres, elevated two hundred feet from the Honeoye Creek in the valley below. These plains, a portion of the Hallock farm, were very productive of hickory nuts, therefore, as a boy I have tramped over them often when chilly November winds began to blow.

I know of no farmers who could be more properly called gentlemen than the Hallocks. They came from the Hudson River, not far from New York city. They seemed to have been accustomed to the best society, were gentlemanly and courteous above the ordinary. They were model farmers in those days. They occupied two large houses, which were always kept in the best of repair, as were also the numerous barns, fences and machinery, with which they were well equipped. Their numerous horses were also sleek and well fed, and all manner of farm work was accomplished with the greatest dispatch, and always in good season.

In those days ordinary farmers tackled a large field with one team, and continued until it was plowed, but the Hallocks would start three or four teams plowing, and perhaps by night it was entirely plowed. Their crops of wheat and corn were the marvel of all who beheld them. More than half their farm sloped to the south, and the balance sloped to the north, toward the creek. I also remember that the northern slope was not so fertile as the southern, and I have noticed this in other localities. The best crops with the Hallocks were secured on the southern slope.

In those early days, when but little fruit was grown, the Hallock boys distinguished themselves by planting on both sides of the highway, for a distance of about one mile, rows of cherry trees. These trees never received any cultivation, and yet bore year after year immense crops of beautiful cherries; cherries being a rarity in the country, especially sweet cherries, both black and white, people came often six, eight, ten or twelve miles to gather these cherries. I do not know on what terms they gathered them, but I presume they gave a small portion of fruit to the producers.

I have always assumed that the Hallocks were free from debt. They always seemed to have plenty of money to pay for everything they wanted, and they enjoyed every comfort. I also assumed that they made their farm profitable, although they did not work excessively hard themselves, and had more leisure for driving than farmers ordinarily have. They were respected by every one, and infringed upon the rights of no one.

Since the Honeoye Creek was as much a barrier between farms on the opposite sides, as a mountain might be, those on one side had little to do with those on the other. I had but little associations with the Hallocks; in fact, I was but a boy at the time, and they were married men. When I first began to propagate plants and trees, which was done in a small way, as the reader may remember, I drove over to the locality of my early childhood, which was situated about twelve miles from our fruit farm, to take orders for plants and trees among my old neighbors. About two o'clock one afternoon I hitched my horse at the gate of Jack and Jill, the twin Hallock brothers. I can scarcely say I knew these men by sight. I had not seen them for ten years, and I did not suppose they would even remember me, or know who I was. They did not know me when they saw me at the door, but when I told them who I was they remembered at once. I was informed that such items as I offered they were in the habit of buying of a firm at Rochester with whom they had dealt for many years. They stated it was their policy to continue dealing with the firm which had served them faithfully in past years. This is a good plan for you, reader, and for myself. When one has served us faithfully in past years he should have the privilege of continuing to serve us in the years to come.

They told me an incident which had occurred years ago. They had decided to plant several thousand evergreen trees upon their place. They inquired the price at the nursery they had dealt with so long, and also inquired the price at a neighboring nursery. The price offered by the firm which had formerly supplied them was higher than the new nursery. Therefore they decided to buy of the new nursery. One morning, with three teams, they drove through the streets of Rochester on their way to get these evergreens, and happening to pass the old nursery, which they formerly patronized, they met one of the proprietors, who inquired where they were going. The Hallock brothers were compelled to state that they were going to load up with evergreens at a rival nursery. "All right," replied the genial man who had formerly supplied them. "Next time you will buy of us." The Hallock brothers did not quite understand what their old friend meant, but kept turning over in their mind his saying: "Next time you will buy of us." The trees they bought of the new nursery were fine looking trees, and they could see nothing to complain of, but a year from that time they were nearly all dead. Since the Hallock brothers desired to replace them, very naturally they went to the man who had served them so faithfully. Sure enough they went to him next time, as he had prophesied. Then the Hallock boys were told why their trees did not grow. The reason was they had not been repeatedly transplanted first, as is done in the best nurseries. In order to secure numerous fibrous new roots on evergreens they have to be transplanted several times. Those purchased that died had only been transplanted once, and the roots were coarse, and few of them.

Finding there was no chance of making a sale to the Hallock brothers, I was about to take my departure when I found that my horse had been taken to the barn, and that the lady of the house was getting dinner for me. The Hallocks had taken dinner, but out of kindness of heart towards an old neighbor, they had taken pains to open their cans of choicest fruit, and prepare a meal expressly for me. Had I known that such work had been undertaken, I would have protested, but since the work was done, nothing was left me but to sit down and enjoy the elegant repast. One of the Hallock twins and his wife sat down at the table with me, simply to keep me company, not to eat.

Thus the Hallock brothers were noted for their hospitality and liberality, as well as for their good business management, and business principles. Many people do not understand that farming is a business. The reason so many people fail as farmers is that they have not a business education, and do not know how business should be conducted. Some farmers are easily imposed upon and defrauded for the reason they are not accustomed to do business. The Hallock boys had evidently an early business training, which qualified them for conducting business in a business-like manner.

Only one of the Hallock brothers is now living. Their sons manage the old farms, which are as large and fertile as ever.

Biology, or the Science of Life.

No. 1.

The Editor of Green's Fruit Grower is attending a series of lectures on this subject and will try and give readers of the Fruit Grower a few ideas occasionally, offered by the lecturer.

The lecturer, who is a specialist on this subject, a teacher of Biology in our University, began by stating that all vegetable and animal life came from protoplasm. If in the beginning there was a single germ of protoplasm this would be sufficient to populate the world with the various species of plants and animals, including man, without any other special act of creation. If I show you protoplasm I show you something that has existed since protoplasm was first developed on this planet. There was a time when protoplasm could not exist on the earth on account of the excessive heat. Not only all animal and plant life has been developed from protoplasm, but protoplasm itself has been evolved from something lower. Protoplasm is a jelly-like substance, which, under the microscope, shows various nuclea. Protoplasm has the capacity to absorb food. Whatever there is of life in a plant, or animal, is protoplasm, therefore, protoplasm is the principle of life.

Protoplasm first originated in shallow, sea water; therefore, all vegetable and animal life, including man, came up originally from marine animals.

A cell of protoplasm from a plant was shown under the microscope to be several

feet in length; whereas it could not have been seen with the naked eye, being so minute. This single microscopic cell, of which there are millions in the single life of an ordinary plant, is a marvelous machine. There are circulating ducts running in all directions through this cell containing infinitesimal conveyances, moving methodically in every direction, from one remote end of the cell to the other, crosswise, round about, and in every way carrying nutriment, carrying away waste matter, or employed in other useful work, similar to cars on railroad lines over this continent. The color of these cells in plants is green, hence the green foliage. If the cells were any other color than green they would not be able to nourish the plants, and the plants would not be able to nourish animals.

Animals and plants have more in common than differences; that is to say, plants and animals are more alike than they are unlike; all having come from the same germ. There are creations, which it is almost impossible to distinguish, as to whether they are animals or plants. Attempts have been made to manufacture protoplasm, or in other words, to manufacture life. Protoplasm has been made by the chemist, the cells of which have motion which closely resemble that of the true protoplasm, and yet it is a question if ever protoplasm has been or will be manufactured.

The effect of heat on fruit cells was shown also of electricity. When the warm sun falls upon a growing leaf the protoplasm accumulates at the upper edge of the leaf. At night, or on cold days the protoplasm descends to the lower and warmer parts of the cells. The effect of positive electricity is to scatter or drive away the protoplasm of plant cells, while the effect of negative is to attract.

(Continued in our next.)

—"Y golly!" cried old Mr. Longfurrough, "I call it puffectly scan'lous, larnin' hosses t' jump six foot six inches. City folks mus' think farmers 'ain't got nothin' t' do but build fences."—Harper's Bazar.

—The beadle (to new minister)—A didna like the sermon for three rizzins—first, ye read it; secondly, ye dinna read it weel; thirdly, it wasna worth readin'.—The Sketch.

How Shall we Help the Poor?

This is a leading question the world over to-day; How shall we help the poor? As a class the poor are improvident and heedless of the fact. When they are at work and earning money everything is well. They spend what they get, and have little thought of the morrow. When work stops and no money is coming in necessarily they suffer. Their sufferings are largely owing to their incapacity to properly manage their own affairs. This is not always the case; there are cases where people are struggling under misfortunes, for which they are not responsible. But whatever the cause, the suffering of the poor should be alleviated, if it is possible to do so without lessening their self-respect and without doing them a positive injury.

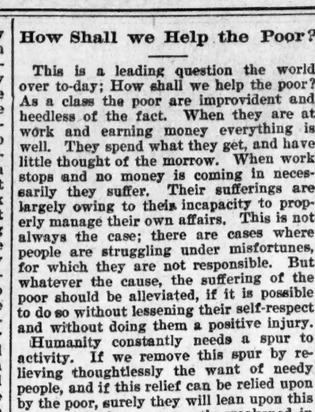
Humanity constantly needs a spur to activity. If we remove this spur by relieving thoughtlessly the want of needy people, and if this relief can be relied upon by the poor, surely they will lean upon this support and be consequently weakened in character and habits.

Therefore it has been considered a calamity by the wisest men to confer charity without great discrimination. It is possible to breed and encourage races of incompetent people.

Notwithstanding these thoughts, every man, woman and child can do something to relieve the suffering and it is clearly their duty to do something along the line of this work. The great question is how to do it successfully. For instance, there were thousands of bushels of apples eatable, but not first-class, allowed to rot under the trees of almost every orchard in many of our apple producing States the past fall. An idea occurred to this office that we bring loads of these apples into Rochester and distribute them among the poor. That seemed like a good suggestion, but the question arose, How can we reach the needy poor with this fruit? Should we drive into a populous street and offer to give these apples away they would be largely taken by a class of people who would exchange a basket for a drink of beer. That is, they would be largely consumed by undeserving people, while the needy poor who are often modest and retiring would receive but a small portion.

In some of the Western States corn is selling at 10 cents per bushel and is rotting in hills in the snow and rain. In India, and also in many of our large cities people are actually starving and freezing, being too poor to purchase food and fuel. But thus far no wise man has been able to solve the problem, how to reach the needy poor with the much-needed source of sustenance.

But in every city and in every town much is being done for the poor. Much more should be done, and will be done as the years go by, when people get a better idea of Christian charity.—C. A. Green.



The above cut by our own artist, W. E. Graf, represents the bilious city man on his way home to his suburban residence with packages of peanuts, cakes, pop-corn, mustard, celery, crackers, cheese, etc., but not a particle of fruit.

How much better the picture would look if the man was represented carrying in the other hand a basket of grapes or apples, which would doubtless correct his disorganized system.

The second cut, also by our own artist, was intended to represent the dissatisfied condition of the luxuries of the field and garden at her table.

This lady doubtless was brought up on a farm, and was accustomed to abundant supplies of strawberries, raspberries, currants, gooseberries, peaches, pears, apples and other fruit. As she sits absent-mindedly, nibbling at the corner of her napkin, she again sees the long rows of blossoming strawberries, the bright blush of the raspberry and currant upon the bushes, from which she has so often gathered them, and she contrasts these scenes of the past days with those of her present surroundings.

Moral: Husbands, furnish your tables with fresh, ripe, tempting fruit, thus not only making your own life more cheerful and endurable, but also that of your lovely companion.

Bosc Pear.

Editor Fruit Grower: Having been a subscriber to the "Fruit Grower" for fifteen years past, and knowing that our friend Green is the best of authority, having fruited the most valuable of all the fruits, please report in the next issue of the Fruit Grower what you can tell of the Beurre Bosc pear. How does it compare in size with Clapp's Favorite? Can you recommend it as a good pear for family use? How does it compare in quality with Sheldon or Seckel? Do you know of any other winter pear as good in quality as Winter Nellis? Please name three or four best varieties for family use (not market), quality being the main consideration? Please name two or three of your largest varieties of blackberries. How does the Erie or Minnewaski compare in size with Lawton? Can you mention any apples as good in quality as the old Rambo? If so, please name three or four kinds for family use. What about the Wolf River apple? —Truly, etc., H. G. Heberling, Short Creek P. O., Ohio.

(Reply: The worst that can be said of Bosc pear is that it is a slow growing tree in the nursery, hence it is difficult to get thrifty and straight trees, such as please those who buy nursery stock. It is a productive pear of good size and quality. It has a long, somewhat curved neck, large at the base; color is russet yellow when mature. Wherever it is known it sells for a good price on account of its superior quality. Thomas' American Fruit Culturist describes the quality as follows: "Flesh juicy, buttery, rich, perceptibly perfumed, sweet and excellent; season, mid-autumn; growth moderate; regular even bearer, fails on quince stocks; origin Belgium."

Bosc is fully as large, or larger, than Clapp's Favorite. It differs from Sheldon and Seckle in quality, but will be considered about equal to those well known varieties. Josephine de Malines is about equal to Winter Nellis in quality. Both the Winter Nellis and Josephine are straggling growers in the nursery, but productive in the orchard. I rather prefer Winter Nellis on account of productiveness and vigor. For a family I would recommend Wilder Early, Bartlett, Clapp's, Sheldon and Anjou. The largest blackberries which are reasonably hardy are Kittatinny, Lawton and Minnewaska; Kittatinny is the least hardy of the three; Lawton is the larger of those mentioned. Hubbardston Nonesuch, Fanny, Grimes' Golden, Spy and Wagener are about equal to Rambo in quality. Wolf River is large and handsome, something like Alexandria. —C. A. Green.

Thomas' American Fruit Culture.

We have received a copy of the revised and enlarged edition of this famous book from the William Wood & Company, New York city. This is a new edition just from the press, which includes many changes, which brings it down to the present day and hour. No fruit growers' library is complete without this famous work. We can send this book post-paid at the regular price of $3.00 per copy.

C. A. GREEN.

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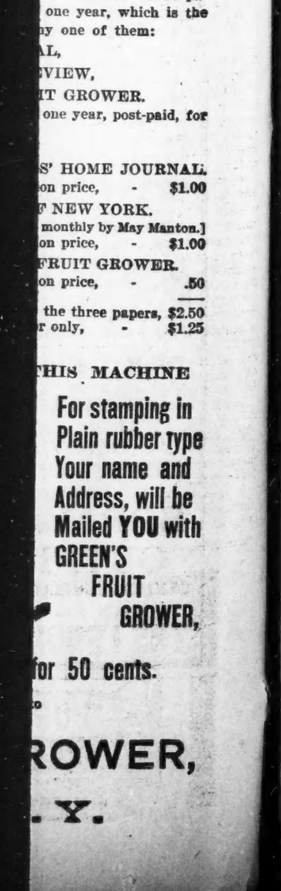

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WOMEN'S DEPARTMENT

"The hand that rocks the cradle rules the world."

Testing The Fruit.

Written for Green's Fruit Grower by
SYLVANUS PRESNALL, Marion, Ind.

From city and town came the fairies
To gather the wild blackberries;
Then across the fields and through the gates.
To find a bunch of summer grapes.

Tired and hungry they stop at noon
To eat their lunch of nut and prune;
Then on they went happy and merry
To view and taste the red ripe cherry.

As fall the evening shades they tarry
About the fragrant raspberry;
Then on returning they ne'er forgot
To pluck the golden apricot.

Home at last with cheerful hearts they share,
With brothers and sisters, the juicy pear;
And tell of trees bearing in reach
The ripe, juicy, tempting, red-cheeked peach.

ONLY A WOMAN'S THOUGHTS

Stormy March.

Written for Green's Fruit Grower by our regular correspondent, Sister Gracious.

Here comes old March, the "betwixt and between." Neither winter or spring but a muddy and cloudy mixture of both. Still, it is hopeful, for it is the stormy introduction to the lovely weather sure to come. Don't spend it in house cleaning at the peril of health and comfort to your household. But there is the summer sewing and now is the time to do it when we have longer daylight and not so cold, but we can overhaul the contents of closets and attics, and have time to plan, make over and buy new. Try this plan this season and see how grand and comfortable it is to open your closet door, and find the thin underwear or dress ready to put on when the sultry days come, as they are apt to without warning. Many of us have garden work to look forward to and long to be at it, but there will be little to do out doors this month. But get yourself ready. A garden well planned and prepared for is more than half a success. A gardening apron is very useful. Mine is made of ticking with pockets that hold string, scissors and a small hammer. When I get out among my vines I need not run back and look for these necessary things. Many women think money spent in garden tools is thrown away and they dig up the flower bed with a rusty knife or break their backs and get discouraged using a heavy shovel. Now there are spades, light, yet strong, made on purpose for women, and with it, digging is delightful. See about getting one this month and add a good trowel. Some cloudy day when you seem to have lost your grip on hope and spring, visit the nearest florist. You will find his place full to overflowing with potted plants and glad enough will he be to get rid of a few at a very reasonable price. Put them in your sitting room window and enjoy their flowers for weeks before it is time to put them our. Now is the time to see if there is not room, even if your yard be small, for at least one fruit tree. If not a tree, then currants or raspberries, and if not these then a grape vine, at least, you can have that, as long as there is a wall to your house. Then prod and prod 'till the men folks of the family see to buying and setting out some of these things.

ENCOURAGING.

"It is astonishing," said an old man that had worked for years raising small fruits, and as a laborer in a large nursery, "the advance that fruit culture has made. When I was a boy I rarely saw an orange and never a banana. The first time I saw the latter was on a visit to the city and a small bunch was in a grocery store. I asked what they were and longed to taste one; the price of each was 20 cents. I remember how father used to bring an orange or two out to the farm once or twice a year and divide among five or six children and our delight at the beautiful fruit. Now you can buy them by the bushel and bananas come along by the cart full. And there has been great improvement in our own fruit. Apples are plenty and good and we no longer buy grapes at 10 or 15 cents a pound, and the small bunches ornamented with a row of green grapes around the top. We keep them, too, longer. I had some delicious ones on Christmas day. See how the market is glutted with strawberries in their season followed by raspberries and currants. In my young days we rarely had fruit served at meals and we would have been met with laughing sneers if we had suggested apples or grapes on the breakfast table. Our meals consisted generally of pork, fried or boiled, pancakes and corn beef. Again, see the horticultural magazines and spring catalogues. It was tremendous uphill work to teach to growers of any kind that they must not sneer at book farming. Green's Fruit Grower has had about as hard a time as any of them trying to knock some plant sense into folks. But by keeping everlastingly at it they have brought their paper up to the largest circulation of any of the horticultural ones. And their nurseries, too, have grown."

I notice in the spring catalogue of '96 Green tells us his sales of small fruit plants the first year amounted to $16.72 and the last year it was something like $100,000. But we have still a vast room for improvement. Twenty years from now we may look upon the latter part of the century as far behind as we look upon twenty years ago. Fruit is still too dear. It ought to be brought down to the price of cheap whiskey, and the thousands of even small yards in the cities must have some kind of fruit growing in them.

HOME GYMNASTICS.

It was a pretty sight. The floor covered at equal distances by the young girls in dresses that allowed free movements and dumb bells lifted about to the time of joyous music. These girls were from twelve to sixteen and I know most of them, and also that they never made a batch of bread or ironed their starched summer dresses, or could make a beef tea for an invalid or even sweep and dust a room properly. And as for sewing, it was one of the lost arts to them, and yet every one of those healthful movements could be produced by daily household work, using flat-irons instead of dumb bells, or brooms instead of wands. "I know my girl knows nothing about daily work," said a mother to me, "but she is five or six hours at school and her lessons demand two hours of study at home and I haven't the heart to ask her to do anything extra." One of these "highly educated," and "gymnastic every-day" girls married, and calling upon her recently I saw the traces of tears on her face. She soon told me the trouble: "Harry was irritated this morning and had left her without his accustomed kiss, and with the parting fling, 'That she had better go and stay with his mother awhile and learn how to cook.'" "I know," she added, beginning to cry, "that the biscuits for breakfast were like stones, and the beefsteak tough enough for rubber overshoes, but he needn't have been so hateful. I was a good scholar and could rattle off the names of the kings of England, but I would exchange all I know about Rome and the prince mass for a full knowledge of how to make bread, and to choose a good piece of steak at the butcher's." The school houses are now elegant buildings, and the teachers "up" in everything, but what will teach how to carry on a home comfortably. One lady teacher told me, "The mothers were expected to impart those simple things to their girls, but the time now was too short for all they had to cram in."

But in the name of common sense cut off the "prince mass," and the list of the dead Roman emperors and use the time and money in teaching girls "how to live comfortably now and to healthfully care for their households."

LAMPLIGHT FLOWERS.

The true plant lover must be six months ahead, at least in her calculations. So now let us plan for next season's garden, and I want to plead for "lamplight flowers." In the fall evenings, we have to draw the curtains early, and place the Pittsburgh in the center of the supper table, and nothing greets the tired ones coming in after the day's work like a bunch of cheerful flowers, placed so that the light can bring out their colors. I have tried scarlet geraniums, but they are not favorites, for the heat will make them drop their petals over the table cloth, and leave a bunch of bald headed seed vessels far from pretty. But try zinnias, though many declare them "coarse" and not "genteel," they beat the ever present geraniums in many ways. The colors now are soft, yet very brilliant, and their staying qualities just what is wanted in the fall. I have picked them, brave little darlings, after a severe frost. Placed on the tea table they hold up their heads and keep bright and cheery, even if placed close to the lamp, and the light brings out the beautiful shades. But we must have a companion for our scarlet zinnias and we have it in pure, white centaurea, or bachelor buttons, and never let us omit a large skeleton leaf geranium, either for outside or the window garden. A few leaves placed with our table bouquets sets off the whole arrangement, and we will want a leaf or two to mix with our one flower that our plant shelves furnish. Why not have a nice bed of zinnias next summer for a change in the circular lawn bed? One gets tired of the scarlet geraniums to the right, and to the left, all down the street and around every country house. Now let the florists make over a variety that will do well in the window garden and we shall be happy.

Suggestion to Grocers—Keep Borax.

Do the grocers know who read your fine paper that borax is one of the most important articles for the housekeeper today?

Many women tell me they cannot get it of their grocer, and have to pay twenty cents a pound for it of the druggist. Twelve cents is what my grocer charges, and we use it by the pound, many pounds, in every department of the household, from cellar to bath room, from sick room to toilet table of the well. A physician told the writer borax was one of the finest household and hospital accessories, being antiseptic, a germicide and disinfectant. For cockroaches it is simply wonderful, and will, if mixed with a little powdered sugar and placed around, destroy and banish them, sure as fate. A Toledo druggist packed away some currants in borax, and they kept beautifully for months.

As a preservative for fruit and meats borax is used by the most progressive, and is fine. For cleaning paints, kitchen linoleum, sinks and silverware it is delightful, and the laundresses who use it for the weekly washing especially recommend it because it does not "eat" their hands. Flannels are simply impossible without borax, and soft as new and unshrunken when it is used. Hair brushes, combs, etc., are wholesome when cleaned with it, and even the coffee pot is sweetened and robbed of its musty odor if borax water is boiled in it once a week.

Can you not see that with over 200 household uses every grocer should sell borax, and sell it cheap.—Grocery World.

—The latest cushions for head rests on chair backs are made in heart shape. They are covered with light colored satin, silks or linens, and embroidered in some graceful pattern, and many of them are made up plain and tufted or quilted. They are fastened to the chair back with small cords and tassels.

About Rag Carpets.

There are few things that add so much to the home-like appearance of the family sitting room, as does a well-made rag carpet. It is preferable to a hemp or ingrain, because it is more durable, and does not show the marks of muddy or dusty feet so plainly.

In rag carpets, as in other things, there have been many improvements since the days of our grandmothers, and many of those now made, are artistic and beautiful in effect. So great a demand for this kind of floor covering has arisen, that it is regularly quoted in the catalogues of carpet dealers, and in many of the large cities, their manufacture has become an established industry. They are certainly economical, for they cost nothing but the small amount paid for the chain and weaving, and will bear an immense amount of hard wear.

Rich, dark colors, well mixed and sewed hit or miss, warped with dark chain can hardly fail to produce a good effect, and some of the carpets so made are beautiful, having much the appearance, where the colors are judiciously chosen, of rich Turkish carpeting. Such a carpet is more suitable for a bedroom than one that is in constant use, for it is a well known fact that a dark carpet shows dust and dirt more than a lighter one. All white or very light goods should be colored, and the diamond dyes for cotton produce beautiful colors that do not fade. The strips should not be more than a yard long to produce the best effect and should be cut narrow, so the carpet will not be coarse and heavy. The warp may be of two contrasting colors woven in honeycomb style, or several colors may be used, arranged in stripes. The weaver usually makes no extra charge for striping the chain. One and one-fourth pounds of rags will, if fine and even, make one yard of carpet. Never buy any but the best of chain, and allow one pound for every three yards.

Preparing the rags for the carpet need not be the tedious and disagreeable task it is so often considered. In fact a basket of strips ready to sew, makes handy and enjoyable pick-up work for odd moments, as it may be done almost mechanically, requiring less mental exertion than does the knitting of a stocking or a bit of lace. If the carpet is to be hit or miss, the material should all be cut and mixed before any is sewed into balls, so the colors may be evenly distributed and uniform throughout. The rags are then put in bags where they will be safe from dust. When sewed they should be wound into balls, weighing about one pound each. It is but little trouble when a garment is worn out, to select the portions suitable for carpet rags, leaving out all seams, hems and thick places, wash and lay the pieces away for use. It is surprising how soon a large amount of material will accumulate, or how little work it is to prepare them.

Some housekeepers prefer striped carpets, and are always anxious to get new and pretty designs. During a recent visit to a weaver, I saw some beautiful striped carpets and will describe one of them. The plain stripe was made of dark rags sewed hit or miss; the bright stripe was composed of three threads of blue, two of white, two black, two yellow, four light green, four green, four dark green, two black, three pink, four light red, four red, two dark red, and four black. The white rags were dyed green, red, blue and pink with diamond dye and used for it. The four threads of black is the center of the fancy stripe, and the preceding colors are reversed for the other half.

Now if you cannot afford the new ingrain or Brussels carpet you would like, gather up the rags in the closets and attics and convert them into a carpet. You will be sure to be pleased with the result, and the expense will be so small that anyone can afford them.—Clara Hammond.

A Few Pointers.

Written for Green's Fruit Grower by
MARY ANN PORTER.

Of all things to despise, the chief one is, according to my notions, shiftlessness. Some years ago, I, in a foolish moment, married Hezekiah Porter, and shortly thereafter discovered that he was one of that kind of men who proclaim on every convenient occasion that a woman's place is in the house; and for a long time it was uphill work for him to make enough money on our farm to meet the payments on the mortgage, as they fell due, which was all owing to his shiftlessness. There was wast—fences got down and a lack of system and order everywhere; and as things kept going from bad to worse I decided that it was high time for me to take hold in the management, and restore order out of chaos. It was a bright day in April, a day never to be forgotten in the annals of our history, that I started in. Hezekiah had been ploughing; as he came by the house, to put his team away, I asked him to plough up a garden patch next to the kitchen.

I had procured a note-book, meaning to keep track of the time Hezekiah wasted, it being my intentions to spend only as much time per day in my garden as he wasted. That note-book, now considered by me as a sacred relic to be handed down to our posterity, shows how remiss a man can be whose chief fault is shiftlessness. And law sakes alive! it startles even Hezekiah now when he looks at it. During the summer months my notes are as follows: Per day—Average time to lighting and filling pipe, 40 minutes; average time to loafing, 50 minutes; average time to chasing after cow, 15 minutes; average time to looking for tools left laying where last used, 20 minutes; making a grand sum total of 2 hours and 15 minutes for me to spend in my garden daily.

My housework was carefully done each day, and as promptly was my garden work accomplished. As a result the garden proved to be a success from start to finish. Beside furnishing our own table, sixty-four dollars' worth of vegetables was sold.

Retrospectively now as we glance over the old diary Hezekiah and I declare that my plan of opening his eyes to his shiftlessness proved to be the stepping-stone to better times and fortune; and that if he had worked during working hours industriously and persistently, an additional $100 could have been deposited at the same time that I turned over the bag of silver, the proceeds of my garden, made and worked at during the time that a shiftless man had spent in idleness.

Fancy Baked Apples.

A delicious way to cook and serve apples for a company luncheon is thus: Use a medium-sized tart apple. Peel and core. Place the apples in a baking dish and pour over them half a cup of water. Put the pan in a hot oven, and when the apples become heated sprinkle over each one sugar enough to form a coating, and bake them until soft.

Prepare a syrup with one small cup of water, one-half cup of sugar. One spoonful of lemon juice and a little of the grated rind. Blanch and chop fine almonds enough to make two tablespoonfuls; have the same quantity of chopped raisins, and cut into bits two dozen candied cherries; add these to the other ingredients. Place over the fire, and when the syrup becomes hot draw to the back of the stove and cook slowly thirty minutes.

When the apples are baked take them from the pan and set close together on a pretty dish, taking care not to break them. Fill the center and between the apples with pieces of the cooked fruits, and pour over them the hot syrup. Serve the apples cold with whipped cream piled around them.—Western Rural.

Salt these Facts Down.

—Salt puts out a fire in the chimney.
—Salt in the oven under baking-tins will prevent their scorching on the bottom.
—Salt and soda are excellent for beestings and spider-bites.
—Salt thrown on soot which has fallen on the carpet will prevent stain.
—Salt put on ink when freshly spilled on a carpet will help to remove the spot.
—Salt in whitewash makes it stick.
—Salt thrown on a coal fire which is low will revive it.
—Salt used in sweeping carpets keeps out moths.—San Francisco Post.

Mrs. Brown visits the Capitol.

"Yes; I've actchully been to Washington on a visit. I'm jes back, an' I'm 'most fagged out, too. I went to visit sister Malvina. She married Lemuel Jones, you know. He's a butcher there.

"Do tell you about my visit—how I enjoyed it, an' what I saw?

"Well, I had a nice time—a mighty nice time. I wish you could have been along an' seen the sights. There was a forty-nine-cent store there that jes beat anything you ever laid you two eyes on. You never seen sech bargains in all your born days. You know them muffin-pans that Silas Reed wants seventy-five cents apiece for, up at the cross-roads? Well, I could jes git all I wanted at forty-nine cents a pair. Now what do you think o' that?

"An' them glass pitchers like Miranda Johnson's got—she paid a dollar apiece for 'em in butter an' eggs this very spring, mind you; an' I bought the very same pair like hers for forty-nine cents apiece. Jes think o' that; forty-nine cents apiece!

"Did I see the Corcoran Art Gallery? Yes, I s'pose I did; but I didn't go in. Sister said there warn't nothin' but a lot o' picture-paintin's in there, so I didn't go in, though I am right fond o' photygraphs an' the like. Well, as I was sayin', I never did see sech bargains as they had in that forty-nine-cent store. I saw some windershades that were jes beautiful. They had them big bokays o' roses on 'em, 'most as natural as real. I bought a pair for the dinin'-room for only forty-nine cents. Warn't that dirt-cheap?

"Did I visit the capitol? La! yes; me an' sister Malvina spent 'most two hours there. I never was so tired out walkin' around a place in all my life. That reminds me. My feet was well-nigh blistered, an' I jes had to go to the forty-nine-cent store an' buy me a pair o' carpet slippers to wear about the house. I've got 'em on now, they're so comfortable-lookin' an' easy, an' I only paid forty-nine cents for 'em. Silas Reed asked a dollar an' ten cents for a pair that warn't near as nice as these I've got on.

"Oh yes; of course I went to the White House an' shook hands with the president; everybody does that. An' let me tell you, he had on a black necktie jes the dead match to one I bought Hosea at the forty-nine-cent store. I don't believe you could tell 'em apart.

"Smith an' Son's Institute, did you say? I reckon I saw that too; but there was such a lot o' big buildin's, I can't half remember the names of 'em all. They had little books with pictures in 'em of sech at the forty-nine-cent store, but there were so many other things to buy I didn't git one.

"Dear me! Yes; we went clean up to the top of Gen'r'l Washington's monument. It was awful high, an'—would you believe me? —you could even see the flag that was wavin' over the forty-nine-cent store from up there. Sister Malvina pointed it out.

"What! you ain't goin' a'ready? Well, you must run in agin soon; I've got a lot o' more things to tell you. I want to show you the cutest trick you ever saw. It's a new-fangle thing to take pies out of the oven without burnin' your fingers clean to the bone. I bought it an' a dozen nice pie-pans at the forty-nine-cent store jes before I started home."—Emma Cleveland Wood, in Century.

—C. A. Duryea says that wild fowl should never be stuffed, the flavor being impaired by that process. They require less dressing than the domestic fowl. Put salt, pepper and butter into each, in place of stuffing. Put an onion, salt and water into the dripping pan, and baste with that liquid for the first ten minutes; afterward baste frequently with butter. A rich brown gravy should be served with the fowl. When the breast is sliced, before cutting from the bone, a squeeze of lemon over it is an improvement.

—Sachets are now often made in the form of huge flowers, with the powder stored in the green muslin calyx.

BREAD.

Interesting Report Prepared for Secretary Morton.

The first important point shown by experiments is the relation of weights of bread to weight of flour used. With one hundred pounds of flour an average of one hundred and forty-three and fifteen-hundredths pounds of bread were produced.

It is shown that one hundred pounds of flour, which cost $1.95, plus the usual amount of other materials added, which cost on the average 49 cents, making a total cost of $2.44, will produce bread sold for $5.97; that is, making the materials into bread has increased the cost $3.53. Stated in another way the actual nutrients which would cost $1 in the form of flour, lard, butter, yeast, salt, etc., would cost $2.49 if bought in the form of bread; that is, the consumer must pay $1.49 for making materials which cost $1 into bread and for distributing and selling the bread.

One bushel of wheat (60 pounds) will make about 44 pounds of flour; one barrel of flour is, therefore, equivalent to 4.5 bushels of wheat. The producer receives at 65 cents per bushel $2.93 for wheat equivalent to one barrel of flour. The baker pays approximately $4 for the flour. The difference, $1.07 or 40 per cent. of the first cost plus about 72 pounds of by-products, viz., bran, middlings, and coarse flour, worth at present prices 54 cents, represents the charges of manufacturing and carriage to the baker. The baker manufactures the flour into bread, adding lard, etc., worth about 96 cents and the consumer pays $10.74 for the bread produced. The difference representing the charges of the baker or the increase in the cost of nutrient between the flour and the bread, is $5.78 or 116.5 per cent. In other words, $100 worth of flour and other raw materials are made into bread which sells for $216.50.

It would seem, therefore, that the increased cost of nutrients due to the transformation taking place between the producer and consumer is chargeable in greater measure to the baker than to the miller.

These facts having been derived from actual experiment it remains for the consumer to determine whether under his condition it will be more economical to purchase the bread or to purchase the flour and other materials and to incur the other expenses necessary in the baking of bread at home.

Asparagus Flavor.

It requires superlative steam heat to can asparagus, hence the failure of families who attempt it. But the juice for seasoning soups, stews, etc., can be secured and easily preserved by boiling the asparagus and separating the liquid from the stalks by straining through an agate colander and then through a cheese-cloth bag. The juice from a half bushel of asparagus can be reduced in bulk by boiling, so as to no more than fill a quart jar; seal hot. When opened it should be kept very cool, or else frequently boiled to prevent spoiling.—H.

P. S.—The last summer was my second trial. First season, pint jar. Last season, four quarts. Keeps splendid. I have boiled asparagus five hours; sealed boiling, but it would "bubble" every time within three days after sealing.—H.

Hints to Housekeepers.

—Electricity can be utilized for table decoration in wonderful ways. Miniature icebergs, surrounding an electric light, produce a beautiful effect, and lights can be arranged among ferns so that they resemble a cloud of fireflies.

—Silver handles for tooth brushes are arranged so that the brushes fit into them, and can be renewed whenever necessary.

—A dress pattern always makes a nice present, and can be bought in a box for that purpose.

—For bathing purposes, long mittens made of Turkish toweling are much more convenient than a washcloth or sponge. At night put them in a washbowl of salt water, and in the morning wring them out, put them on and rub the body with them.

—A pretty and effective decoration for a scarlet and white dinner given recently was white anemones and branches of scarlet barberries. They were in clear white glass vases, one at each end of the long table. Sprays of small ivy were laid across the table and tied with knots of scarlet ribbons.

—A piece of camphor gum is a very good indicator of what the weather is to be. If when the camphor is exposed to the air the gum remains dry the weather will be fresh and dry, but if the gum absorbs the moisture and seems damp it is an indication of rain.

It is a mistake to wear a shoe too small for you, thinking it will make your foot look prettier. It causes your foot to look cramped, heavy and clubby, and will effectually prevent you from walking well, comfortably or gracefully. Flat heels are the only sensible heels to shoes, and the only heels that will enable one to become an easy, light walker.

—In city apartments, where space is limited, beds are frequently covered with embroidered tapestries, or silk cretonnes, the pillows being stowed away in some convenient place and replaced by an upholstered bolster. Where parlors adjoin the sleeping rooms and beds are exposed to view the fashion is a convenient one, but it is hardly to be recommended otherwise. —American Cultivator.

For The Table.

Written for Green's Fruit Grower

While attending a fancy work exhibition some time ago, I found nothing that attracted so much admiration as the embroidered center-pieces and doilies. The material was white linen, varying in quality from the finest linen lawn to the heavier and more durable butcher's linen. All kinds of designs, from the simplest to the most elaborate were used, and the colors of the flowers were so perfectly blended as to vie with nature's own handiwork.

One center-piece which I thought especially beautiful was eighteen inches wide and thirty inches long, made of a good quality of pillow case linen. The edge was finished with large, shallow scallops, which were composed of three smaller scallops, worked in long and short button-hole stitch with white Asiatic twisted embroidery silk, which makes a very strong, durable edge. Three inches from the edge is a row of hemstitching and inside the hem, a border of carnations, worked with several shades of pink Asiatic filo silk for the flowers, and green for the leaves and stems. Another center-piece made of the same material has a bunch of wild roses in each corner, fastened loosely with a bow knot of pale blue ribbon. The edges were finished with hemstitched hems.

A handsome set of doilies was made of very fine linen, with a scroll design, embroidered in two opposite corners, and a loose bunch of forget-me-nots and leaves in the other corners. The edges were scalloped, the scallops run with coarse cotton thread, then buttonholed with white Roman floss.

Butcher's linen was the material chosen for a very handsome tea cloth, one yard square, with the edges hemstitched. There was a large design in each corner of Fleur de lis, done in the most natural shades of purple for the flowers and green leaves; one stem with two flowers and several leaves composed the design, which is certainly a very handsome one for large pieces.

A set of round doilies, made of fine linen, was beautifully decorated with Ideal Honiton and violets. The scalloped edge was bordered with Honiton braid No. 90, and four designs of the braid placed at equal distances on the doily, held in place with Asiatic Honiton lace thread, and two tiny wheels worked in each design with the same silk. The linen was then cut away under the braid, making a beautiful lace center, from which the sprays of flowers started. The violets were white, delicately tipped with mauve with tender green leaves and stems. It was as dainty a piece of needlework as I ever saw.
E. C.

The Farmer.

I covet no man's wealth to-day, I envy none his place,
My lineage back to earl or duke I fear I could not trace;
But I would sooner fill this chair beneath the roof I own
Than have the cares and troubles that beset a monarch's throne.

My acres are not many, but I won them with my toil,
From boyhood with the plowshare I have turned the dewy soil;
I've whistled in the morning with the lark behind the plow,
A gayer lad, a brighter boy, the wide world does not know.

The flag that floats in triumph where the city's millions swarm
Protects as well the farmer on his cosy little farm;
The stars that gem its azure field in conscious beauty shine
Upon this Nation's capitol and on this home of mine.
—T. C. Harbaugh, in Ohio Farmer.

Why?

I married my wife, why?
Listen, and I'll tell you.
Not because she makes a good pie,
Though she can, I tell you;
Not because she's wondrous wise,
Versed in Greek and Latin;
Not because she likes to dress
In fine silk or satin;
Not because she rides a wheel
(I still wear the bloomers);
Not because in kindliness
All my crotchets humors;
Not because on politics
She keeps always posted;
Not because she knows how I
Like my meat when roasted;
Not because of beauty rare
(That is quickly over);
Not because while she works hard
I could live in clover;
Not because she does possess
Fortune that's immense—
Simply just because she's got
Good, sound common sense.
—Charles W. Hird, in Boston Post.

Hints.

A solution of vinegar and salt is the best thing to clean polished iron as well as copper. Heat the salt and vinegar in the frying pan or other dish. Rub off the stains, then wash it off and scour it with sand soap.

The best dress to wear in the kitchen in hot weather is a comfortable loose belted gown of cotton turned back at the throat and made with sleeves that reach only a short distance below the elbow and need not be rolled up.

CORRESPONDENCE

Our Correspondents.

Green's Fruit Grower is not responsible for the views of our correspondents, hence do not consider that we agree with all that our correspondents write. There are many men of many minds, some right and some wrong. Our correspondents' corner is for the exchange of views of our practical readers. Do not accept their opinions (or our editor's) if they do not appeal to your own judgment.

Burning Strawberry Beds.

Mr. Chas. A. Green: Have a strawberry patch of about an acre; had but one picking off of it, and through father dying was neglected. The consequence is, it is full of fall grass. Would you please give me your advice in your next issue of Fruit Grower or would it be advisable to set it on fire when ground is frozen and with a good high wind blowing? Awaiting a reply, I am, yours, etc.—D. J. Springer, Pa.

(Reply: I have known strawberry beds to be burned over in the way you mention, but such work is always done in the fall, or late summer. Possibly it might be done now, yet I should hesitate to do it after April 1st. It is possible that if burnt over now, or later, a portion, or all, of the fruit germs may be destroyed, but possibly not. Much will depend upon the speed with which the flames sweep over the bed. Usually there is not enough grass upon the bed to make a fire. Thus straw has to be scattered over the grass. If the bed is burned over when the wind is blowing the heat will be less intense.

If the bed is burned over in the winter it will be necessary to cover it at once with straw or manure, since there would be nothing to prevent the fruit germs from being injured.

It must be borne in mind that on the strawberry plants the fruit germs for next season's fruit crop were formed during the previous summer and fall, therefore on each plant of the strawberry plantation in winter every fruit germ is formed, ready to push out into blossoms in the early spring. If these fruit germs are destroyed by fire, or by other causes, there will be no strawberry crop.—C. A. Green.)

A Noble Evergreen Grove, Seven Years After Planting.

Three and one-half miles southwest of Atlantic, is the best evergreen grove in Cass county. It is easily seen from the Lewis road, and is admired by everyone traveling near it.

Five hundred Scotch pines, ranging from eight to fourteen feet in height, running in five rows, twelve feet apart, north and south, eight feet apart east and west, stretching out eight hundred feet one way and nearly fifty feet the other. You look at it from afar and it speaks in no uncertain language; you feel a thrill of pleasure, a longing to be nearer. As you approach, you have kinder feelings towards everybody and everything, and wish you owned such a grove, that you might be near it always. You forget for a time the bitter strife of politics, the struggle for wealth and honor, the cruel laws of commerce, the hard times, and give yourself to enjoying one of God's temples—similar in some respects to the ancient temples used by Grecian philosophers.

Three years ago, when the present owner purchased the farm containing this grove, he said he would dig up every evergreen tree; the other day as he walked through the grove he said he would not take $1,000 for it. Why this change of mind? The evergreens had won his heart. He spoke of their great protection from north wind and snow; its usefulness to young stock in chilly spring, and many other money saving uses; but the main thing was its beauty and its pleasure-giving qualities. He liked it, everybody spoke its praise and all envied it; it was growing better every year. Soon the table could be set under its shade, the young folks could hold parties, picnics or celebrations in it, and every hot Sunday friends could gather for a cool and social time.

Who would say that such a grove is not worth $1,000 to any farm? Has not the past few hard years taught us that the value of contentment cannot be measured by dollars and cents?

G. G. Rice: For keeping ice, pine leaves beat sawdust and they are excellent for mulch.—By O. W. Rich, Atlanta, Iowa, in Rural Northwest, Des Moines, Iowa.

Editor Green's Fruit Grower: I have grown small fruit for a number of years in my State, but would like to move now to another part of the country where the climate is less changeable and more healthful. Do you think we could make a living at berry growing in Colorado or California? Which State would you prefer? How could I get reliable information before moving to a certain place? I have a small family, but enough means so I could stand a year or two of "bad luck."—Subscriber, Illinois.

(Reply: It is impossible for me to give you intelligent counsel except to state that all changes such as you contemplate are hazardous and expensive, and to be avoided if possible. It is impossible to get correct information about localities in Colorado or California, or about any other section. Nobody is able to inform you positively, and you would not know if you went there until you had experimented for several years. Generally the best place for a man is where he is now located. He has more experience with his present locality than with any other, and with the land, climate, neighbors, etc.

It is natural when one has bad luck to move to some other locality, but bad luck often follows to the new place, and my advice would be to fight it out where you are, and save the expense of moving, traveling, and the risk of getting to a place that you do not like, or which your wife does not like, and which is entirely unsuited for your needs. You have my best wishes for your success.—C. A. Green.)

Chas. A. Green: I desire to set out an orchard consisting of apples, peaches, pears, plums and cherries. The soil is a clay loam averaging about seven inches deep with a yellow clay subsoil. What I wish to know is: Should the ground be plowed deep enough to bring some of the subsoil to the surface and put the fertile soil under before planting the trees? I also wish to know what is the difference—if any—between plums on plum stock and plums on peach stock, and which is the most desirable.—Very respectfully, L. D. Elliott, Indiana.

(Reply: The general rule is not to plow deep enough to turn up much of the subsoil. Occasionally a little shaving of subsoil might be turned up without injury, but if the desire is to deepen the soil not over one-half inch of the subsoil should be plowed up in one season, since the subsoil is not so fertile as the top soil and the succeeding crop would not be so valuable.

No. 2—There is great difference between plums on peaches, and plums on plum stocks. Peach stocks are not so long lived and are more often attacked by borers, therefore, plum trees on peach roots are not so long lived. I should never propagate plums upon peach stock.—C. A. Green.)

Editor Green's Fruit Grower: I like persimmons very much and can eat a few every day; they are too rich to eat many at a time. Horses, cows, sheep, hogs and chickens eat them readily. A few years since a machine agent was traveling through the county. In passing through an old field he came across a persimmon tree with very fine persimmons. He ate very heartily and "said it was a pity that the hogs could get them; they were too good for them and God had not made any better fruit, and if he had any way to carry them he would take them home." He ate so many they made him very sick. In the evening, "he then said they were not fit for the hogs to eat." Here a great many ripen and are gone before frost, and others hang on the trees until late in the fall. —H. M.

Transplanting Experience.

Editor Green's Fruit Grower: As Mr. Pierce, in his article in the January number, rather advises the planting of trees with the roots pruned to a straight root, I feel like giving you or rather the public the way I planted my twenty-four trees last spring. Every fibre was removed, every side root cut back almost to the main root, the aim being to remove the fibres to allow the dirt to fill in close to the roots, cutting back the side roots to save digging, at the same time leaving a smooth end on each root for the new fibres, or roots to come out. (Right here I want to say that I do not agree with most tree planters. While most of you want an abundance of roots on trees, I prefer few; three or four, on one or two-year-old is all I want.) The trees were planted in small holes, leaning to the southwest, hammered in solid just like a post, leaving some loose dirt on top; tops pruned rather close. The trees were well cultivated, but no manure used either before or after. Result: Of the fourteen apples all grew, some of them making over twenty feet of new wood this season; of the six cherry trees I lost three, but I claim the extreme wet weather was too much for them; lost two peaches, and two prunes did not grow, neither did they die. Now if some one else has tried this plan I would like to hear from them.—Emil Krippendorf, Ill.

The Time to Apply Manures.

Editor Green's Fruit Grower: Failures with manures, either farmyard or chemical, are often due to a mistaken idea as to the proper time to use them. Some forms of manures act quickly, as for example, nitrate of soda or thoroughly rotted compost. As a general rule some time must pass before the forces in the soil can act on the manures and change them into forms fit for plant food. If a soil contains an abundance of ammonia ready for plant food but not enough potash or phosphoric acid, the ammonia will be taken up rapidly; a rank growth of foliage may result, but before maturity the supply of ammonia is exhausted and there is none left to finish the work. If the supply of potash and phosphoric acid in active shape is not present in sufficient quantities, not only will the plant fail to mature but in the case of forage plants the hay or fodder will be nearly useless as stock food. On the other hand, if the ammonia is slow in coming into use, the earlier stages of growth will be starved and the more abundant supply later on will come too late.

Potash and phosphoric acid are rarely so freely available as ammonia, but they are quite as necessary for a useful plant growth. A plant cannot use these two mineral manures in the form in which they are applied at the time of planting. If a dry time should come immediately after planting, these minerals in the crude state are almost useless—the same is true of farmyard manure.

Potash and phosphoric acid may be applied several weeks before seeding time, as they will lose little or nothing by drainage, etc. This is not true of nitrate of soda or even a quickly available tankage. Both these forms of ammonia may suffer loss from drainage or by decomposition in the soil. It is a good plan to apply the minerals some time before planting and the ammonia at the time the soil is finally put in shape for seeding. Even if complete manures are used, they should be applied some time before planting. The chances of a loss are much greater from not having the manure in proper shape, than from any danger of losses from leaching, etc.

Lime undoubtedly quickens the action of all forms of manures—fertilizer chemicals are as much manures as the refuse products of the farmyard—and should be used freely when the work of manuring has been delayed. But this is merely a makeshift. The proper method for profitable farming is to be sure the manures are in proper form by making early applications. Lime is always valuable to promote availability and to carry off deleterious substances lodged in the soil. It is a purifier for plants as it is for man.

The time to apply manures is, at least some weeks in advance of the seeding time in the case of well rotted farmyard manures, some months in the case of other manures and chemicals. For next year's corn the Kainit, if not already applied, should be broadcasted without delay. The nitrate of soda for the hill may well be used at the time of planting.—S. Peacock.

Editor Green's Fruit Grower: Am thinking of building an apple house to hold 1,000 barrels or more; have a north hillside. My plan is, to dig into it and wall three sides with stone, against which will be banked the earth thrown out, the other side (facing the north) will be a double wall of boards and felt. In it will be placed the doors and windows for light and ventilation; should there not be ventilation from top also? and would it be advisable to have the bottom and sides of the bins slatted and raised a few inches from the floor. My idea is that the temperature could be controlled better in such a building than in one wholly above ground.

Let us know through the "Fruit Grower" what you think of the plan or give us the best plan for a house of the kind that can be built cheaply, and will keep apples from ripening and decaying so that they can be held for the late markets.—Subscriber, Va.

(Reply: There are thousands of plans for building cold storage houses; some being better than others, but none will preserve fruit perfectly as will those that cost $20,000 or $30,000, worked by steam power and ammonia. Such buildings are too expensive unless the community takes hold of it. I could not explain how to build one of the ordinary kinds without spending a day over it. I will publish one soon from the Rural New Yorker of recent date. Perhaps you can get this by sending to the Rural Publishing Co., New York city.—C. A. Green.)

Correspondence Continued on Page Nine.

CORRESPONDENCE

Continued from eighth page.

From Washington State.

My subscription to the Fruit Grower has run out and as, on the information gleaned from its pages, from an amateur of so ignorant a type that I could not distinguish by the leaf, an apple from a plum tree, I am fast becoming a successful fruit culturist I would not dare to be without the information I get from every copy of it, so find enclosed 35 cents for which send paper, beginning with February, also Green's Four Books (I have the Six Books).

As you were interested enough in my account of how I saved one hundred cherry and plum trees that were nearly two months in transit last spring to publish my method in your paper perhaps you would like to hear how they came through the summer. Those little one year cherry trees were the wonder of every one that saw them. Although they did not arrive till late in May, which is summer here, and were white with blossoms when taken from the box, only about five per cent of them died, while after all the abuse they had withstood, lying five weeks in a damp wharf boat; one of the little cherry trees, E. Morello, about as big as a lead pencil and a foot and a half high, actually bore and matured four fine cherries, and several trees bore one cherry each. I suppose for the good of the trees I should have picked them off, but aside from berries, it was my first fruit (having planted my first tree two years ago) and I could not muster courage to do it.

I have set out trees from four different nurseries, but Green's trees are the trees for me. THEY GROW! Delays, bad management, amateur planting. They are proof against ill treatment. A little soil and a bucket of water and you will have a tree and not only a tree but fruit, in spite of everything. They seem to have so much vitality. I have lost from 10 to 20 per cent. of trees from other nurseries that were heeled in well last fall and set out in March, having, it seemed to me, the best chance to live. They most all leafed out (about 300 in number), but when midsummer came they died. Irrigation did not seem to agree with them, and here I think I have made a discovery. I believe Green's trees are the trees, where irrigation must be depended on entirely for moisture. They take to it like a duck to water. The sweet cherries, Napoleon, and plums, Washington and Reine Claude, outstripped everything in the orchard; some of them grew branches four feet long and the bark on the trunks was as shiny as if it had been glazed.

Thinking to save freight, which is $4.00 per hundred from Rochester to this place, I, this fall, ordered 100 trees from a nursery in this State. The trees had to come over two railroad lines, by boat on Columbia and then by express 100 miles nearly. They were wrapped in a gunny sack, that is the roots, with a little alfalfa hay twisted round them. They were side-tracked as were the Rochester trees last spring, at one place so long that a mouse built a nest, hatched her young and was gone, leaving the nest among the roots to tell the tale. The trees arrived January 1st, having been six weeks somewhere. The trunks of the trees were barked on all sides, the sack worn off and roots and trees so dry and dead that they snapped at a touch and of course I had to throw them away. They had only four hundred miles instead of nearly four thousand to come and had they been boxed and packed as were Green's trees I would not have lost a tree.

I have got that order of trees to buy over in the spring and were the freight twice what it is I should never be tempted again to buy a single tree from any nursery but yours, so you will surely hear from me again. Mistaken economy don't pay.—Yours respectfully, Charlotte K. Stanton, Wash.

P. S.—You thought I was a man last spring when you commented on my tree planting, as I only signed initials, but you see I am "only a woman."

I can say that your paper contains the most general information, relating to successful farmers and fruit growers for the money of any paper ever placed before my eyes.—Arthur J. Reed, Coldwater, Mich.

Persimmons.

Mr. Chas. A. Green, in the current issue of "The Fruit Grower," says he wants the experience of those who grow persimmons. I have made the American persimmon a rather close study for nearly twenty years and am very much inclined to the belief that it has a great future in store for it. The common persimmon, Diospyros Virginiana, is very common south of forty degrees and sometimes as far north as forty-two degrees, but does not succeed well at the North. Trees grown in open ground are round-topped, with rather open head, and branches more or less twisted and crooked. The wood is very hard, fine grained and elastic. The fruit varies in size from that of a small plum to that of a medium-sized peach. When green the fruit is very bitter, but when touched by frost it is sweet and luscious. Persimmons will not come true from seed and are very much inclined to sport. Noting this fact years ago I have been experimenting carefully, hoping to find something very much better. I met with varied success up to about six years ago when I succeeded in obtaining a variety with fruit averaging two inches long by one and one-half inches thick, very meaty, with delicate flavor, fewer seeds than usual and first fruit ripening here.—Southern Kentucky, August 15th.

I have named this variety "The Bulletin." While grafting is an entirely safe way to reproduce, I have found a much better and quicker way of propagation, which I have successfully practiced in increasing the young stock from the parent tree. This "Bulletin" variety has always produced a fine looking tree with the absence of the ungainly crooked branches of the others. I am satisfied "The Bulletin" is the variety for the North from the fact that it ripens so much sooner than any other, and is perfectly hardy, so far. Some young trees sent to the Northwest a few years ago bore fruit this year and were very satisfactory both in growth and fruit. Those wishing to experiment with seed, I would say: plant the seed in the fall and transplant at one year old. Many of the common persimmons are entirely barren, others nearby are now literally festooned with fruit, small, it is true, but very attractive to Br'er 'possum and family during these moonlight nights.

All of the varieties in this locality—I mean, of course, the natives—seem to be equally vigorous in growth and entirely hardy. Fifteen degrees below zero does not seem to affect them in the least. I have top-grafted the common persimmon often, but have long ago come to the conclusion that it is not the best way. If there is any further "light" wanted on the persimmon by any one I shall be glad to tell what my experience, in my crude way, has been, but I could talk about it much better than I can write.—Cordially, Asa Spades, Kentucky.

Is the Loudon Hardy.

Has it winter killed? It is hardy with me, and it is planted in a most exposed place swept by every winter gale. Last winter was a hard one, the thermometer going as low as 31 degrees below zero, and without the least protection the Loudon came through all right. This winter it is having the same rough usage, just to test its hardiness again. As a berry, no raspberry I have tried surpasses it. Unlike the Turner, it makes only a moderate amount of suckers. I wish it suckered a little more freely, as I want more plants and am not getting them fast enough for my purpose, Golden Queen, Royal Church and another red raspberry, of which I do not know the name, also Brinckles Orange were hurt by the severe weather. The Turner appears to me to expend all its energy in filling the ground, I was going to say for miles around, but may say for many yards, with its excessively abundant roots, which greatly impoverish the soil beyond any possible return this wretched variety can give. I shall root it all out if possible.

I wonder if you have seen the novelty Messrs. Wm. Fell & Co., of England, are advertising. Large, light, red berries of good quality, and it flowers and has fruit all through the summer. The blossom is sweet like an orange blossom, and the whole plant most beautiful. It is a perennial, and low growing, about a foot high. I have been endeavoring to get some of Saxton's strawberries across the Atlantic: Royal Sovereign, Noble, Sensation and Cardinal. I have the first and last named all right and in flower now in the house, but Sensation and Noble are dying one after the other. If all goes well I intend getting some more about the first of April, when I can at once transfer them to open ground and prompt growing locations.

Remember that Englishmen do not exaggerate so much as some do. My daughter measured several of her "Dr. Hogg" strawberries and they were 3 1-4 inches across and weighed 3 1-4 ounces. They were fan or wedge shaped.—W. E. Brook, Ontario, Canada.

The Cherry Valuable.

Editor Green's Fruit Grower: Enclosed please find 50 cents for which send the Fruit Grower for 1897 and as a premium 10 Bismark strawberry plants to the above address. Also enclosed please find a few thoughts on the cherry as seen from this part of the country as a standpoint. If you think it worthy the space in your valuable paper please use it, if not consign it to the waste basket.

If you think it worthy I will give my experience in an article every month on some horticultural subject. My occupation is a merchant, but I test the different kinds of fruits merely as a recreation. I also test different kinds of vegetables. To illustrate, I have 52 kinds of grapes, have tested 132 kinds of strawberries, 6 kinds of currants, 6 kinds of gooseberries, 10 kinds of dwarf apples, 40 kinds of standard apples, 10 kinds of pears, 35 kinds of plums, 13 kinds of peaches and 13 kinds of cherries. I have experimented with protection from frost in spring, also winter protection and have made my tests thorough. Hoping this will be satisfactory, I remain—Respectfully yours, J. E. Mertz.

Editor Green's Fruit Grower: The Fruit Grower for February, 1897, has several articles on the cherry. I have often wondered why so little has been said in horticultural papers in regard to the culture of the cherry, when it is one of the most important fruits that is raised in this country.

Of all the fruits that I have raised, none has paid as well or is better for winter use—the apple excepted—nor one that has been as little trouble as the cherry. I have a few trees that bear nearly every year. Black knot has been bad in this section, but there has been none for the last two years. The curculio stung a good many, but I planted plum trees near and they work on them and let the cherries alone. One Early Richmond tree produced 30 gallons of the finest fruit I ever saw and there was not a dozen wormy cherries in the lot. They were absolutely perfect, while not 20 feet away from the cherry tree was a plum tree of the Yellow Egg variety, that I sprayed with a mixture of 1 oz. of Paris green to 12 gallons of water. I sprayed with this mixture five times and jarred the tree three times a day and still more than half of the plums were stung while the cherries were never touched. I believe it is a good idea to plant plum trees near the cherry. The cherry is the most neglected of all the fruits in this part of the country. I give my cherry trees the same care and culture I do my other trees, and there is none that more readily responds to good culture than it does. I shall plant several different varieties to test them and will plant plums near them and by so doing I expect to raise crops of perfect fruit.

In traveling through the country there is not one farmer in a dozen that has a cherry tree on his farm and if perchance one is found it will be planted in some out-of-the-way place, that will raise nothing else. When good trees can be purchased so cheaply every farmer should have a few at least for his own family use. There is always a good demand for good fruit and the trouble in this part of the country is not to find a market, but to keep from selling what you want for canning for your own use. I sold what I had to sell at 50 cents per gallon.

Of course if every farmer should raise his own fruit then they who had a surplus would have to sell to canning factories or find a market elsewhere; but that is not likely to happen for farmers as a class will not spend a few dollars for trees that would most certainly bring as much money on the investment as could be made on any other investment. But until farmers generally plant more there is no fruit that would make more clear money.—J. E. Mertz, Ohio.

About Helping the Poor.

Editor Green's Fruit Grower: Here is a letter from John MacLeane, of Peoria, a city in State of Illinois, where I have a home in which we rejoice. We have read your Fruit Grower and appreciate the same.

Your question, How to increase the value of your paper? attracted my attention, and allow me, in my Dutch (Holland) way, to make a suggestion.

Before doing this I must confess my ignorance in horticulture and admit that myself and boys received valuable instruction from your paper.

I herewith thank you for your Christmas present, the Fruit Grower, and am a warm advocate of the same, as well as the trees received true to name and bearing A1 fruit. Now for the suggestion.

As in horticulture and agriculture the world, through the printing press, is exchanging valuable thoughts by which mankind is benefited. Why not devote part of your greatly circulated paper to instruct our brother man and sister woman to love and helpfulness to each other. I am myself a liberal, and do not believe in interfering with the rights of others, but I ask the question. Is it right when corn is only worth 20 cents a bushel that in a city like Chicago or New York, people starve for the want of food, when money is plenty and people that have money willing to help? Now, Mr. Green, I believe here is a field of being able to accomplish a great deal of good for the alleviation of our deserving poor, by kindly stating our duty to each other.

It has been wisely said that love to man are the rounds in the ladder by which we climb upward. Deeds, and not creeds, will give us a balance in our favor.

With many good wishes to yourself and family, I remain—Your indebted servant, John MacLeane, Peoria, Ill.

Mr. Green—Dear Sir: In looking over your Fruit Grower I observe that you are not speaking of any extra good blackberry with your wonderful red raspberry, the Loudon. I fruited the Loudon this summer and I consider it not only the most valuable red raspberry in cultivation, but also the most promising thing to plant for profit in the whole list of small fruits. What the Loudon is among red raspberries, the Eldorado is among blackberries. I fruited the Eldorado this year and its evident superiority over all other varieties grown here is so great that it will be plants the leading cropper as soon as the plants come within reach of the commercial grower.—E. F. Stoner, Ohio.

Persimmons.

Mr. C. A. Green: I see in Green's Fruit Grower for November you wanted the experience of persimmon raisers. Having watched the persimmon for twenty years and being a persimmon enthusiast, I will give mine. There are persimmons growing wild from here south on most all the streams. They grow mostly on the rocky hollows running down to the stream. Not I think from choice so much as from necessity; the prairie fires kept all timber down except on the rocks and in the bottoms. The persimmon is like the mulberry, male and female. I think one-half of the groves I have seen have no fruit, being male trees. Most all the groves I have observed are either male or female trees, seldom see the two in the same grove showing they spread, as a rule, by the sprouts. I see no reason why the persimmon won't grow over about all the United States. The cold or the heat, the wet or the dry don't seem to injure them in the least here. They always have a crop on, and a full one at that. I planted trees from a native grove some fifteen years ago. They bore in four years and have had good crops on every year since. I also planted five seedlings, four of them were male trees. The other tree bore fruit almost like the parent trees. It stood among the male trees and bore so full it would break down with fruit. The trees on my place the farthest from the male tree are never so full, but all the trees come from the same grove. Some groves never bear good crops. I never saw the persimmon grafted. They transplant best while young; some varieties transplant better than others. I have three trees of the American seedless that bore this year, three years from transplanting. They are fine, one large one two inches in diameter. The large ones all had some seed in, the smaller ones were seedless. I hung male bloom all over the tree while in bloom. We have persimmons on the trees from the 25th of August to the 25th of March; good to eat all the while. What other fruit can beat that?

If you can succeed in awakening the people on this persimmon question that would be glory enough for one man.—Yours for persimmons, J. R. Harrison, Kansas.

Editor Green's Fruit Grower: The February number is immense, worth to any farmer or party having a fruit farm such as mine (on the Hudson) three times a whole year's subscription price. The advertisements are an important and valuable feature. I read them all and bought my little giant sprayer from reading an advertisement in your paper. Wrote to three business firms to-day in answer to advertisements in February number and mentioned paper every time. You sent me the entire issue of '95 for 20c. Can I get the 1894 at same price? I shall bind the three years in one volume.—J. Yates Peek.

Grafting Wax.

Within find 50 cent money order for Fruit Grower. Send Bismarck strawberry for premium.

Here is my formula for making grafting wax. I think it beats your or any others that I have tried; will not crack in cold weather or run in hot: Six pounds of rosin, one pound of beeswax, one pint of linseed oil, melt and pour in cold water and work thoroughly.—James Shields, Butler Co., Penn.

Editor Green's Fruit Grower: I saw in my last Fruit Grower of February, 1897, information asked for about a still for the use of stilling water. I have a copper still on hand without a worm; was used for distilling apple jack. For the last years I used it for distilling essential oils, such as peppermint, pennyroyal, oil of spearmint, tansy, wintergreen, sassafras and birch. With the same article I stilled cherry whiskey and persimmon whiskey; $15.00 will buy the still, delivered to the railroad station.

How to make distilled water: Take 10 gallons of spring water, distill it, rejecting the first quart that comes over, and preserving the next eight gallons of the remainder.—D. L. Nye, Pa.

Mr. C. A. Green: Last summer while on a trip of observation in the fruit business I saw a copy of Green's Fruit Grower and subscribed for your excellent paper as soon as I returned home. Before that time I had eagerly read the articles on that subject in farm journals and other papers, but it was too limited and I longed for a paper devoted to horticulture. I had heard of your paper, but feared the the information contained in a down East paper would not apply to the soil and climate of Missouri. But I find in it articles from the best orchardists in our State and may learn their methods, which are applicable to this section. Your advice to beginners in fruit culture to try on a small scale is good.

Half-mile corn rows are the curse of the West. Intense effort, intense cultivation is the need of the hour here.

I like Yankee ideas if my ancestors did not come over in the Mayflower. For that reason I have taken the Youth's Companion eight years for my children and myself, and for that reason I am a reader of Green's Fruit Grower.—N. Butler, Darlington, Mo.

Editor Green's Fruit Grower; In renewing our subscription to the Fruit Grower, of which we have been a pleased reader for several years, preserving each number (by filing) as a reliable reference. Glancing through the February number we find such a flow of generous premiums it becomes a puzzle to determine which to select and equally puzzling to figure where the pay or profit for the paper comes in; as an illustration, the mailing price of Loudon raspberry is 10c. each, the Eulalie plants the same. Mr. Green offers four of the former and two plume plants, total 60 cents, and the Fruit Grower, all for 50 cents. In addition to the tempting novelties embraced in his premium list there are so many desirable fruits described and portrayed in his catalogue it becomes a problem to decide where and when to end selecting, and when we realize what can be grown on a limited space, of vegetables in succession, fruits and berries and the pleasure derived from the growing. And what greater luxury or more desirable than a plate of crisp, tender radishes for breakfast, a bowl of delicious berries fresh with the morning dew, or a plate of tender, juicy grapes, fresh and full of aroma, and all from your own little garden. Our farm consists of a city lot 45 x 140 feet; just 700 square yards, paved walks 13 yards. One oval flower bed 6 x 12 feet; 117 feet of flower border around the house; 150 feet of strawberry beds; an asparagus bed 4 x 8 feet, two large apple trees, one large peach, one cherry (Eng. Morrello) and four pear trees, all in bearing; 60 grape vines, assorted varieties, in bearing; two large quince, in bearing several years. Of trees two years planted and each one is a beauty: Early apples, pears, peaches, Japanese plums and cherries, all of the choicest and best varieties; 12 Fay's currants bearing two years, 12 Child's Ruby currant, two years planted; 12 Downing gooseberry; 12 big, fat blackberries; 4 Loudon raspberries, superb; 3 broad-leaved elms from seed, 10 feet high, 3 years planted; a hot bed 6 x 8 feet, cold frame 5 x 6 feet with abundant room, with help of hot bed and cold frame, to grow all the radishes, lettuce, egg plant, early asparagus in hot bed; extra tomatoes for table and home canning and to give away. Most of the ground is in blue grass lawn, open space sufficient for family clothes drying, balance interspersed with trees. In planting I cut a five-foot circle in the grass to allow cultivation. Train the grapes on wires, Kniffin system, along the fences, sides of house: do not interfere with flower culture; will soon utilize the roofs for grape and peach, both under the cornice and over the roof, as in Germany; no room for a spear of grass off from the lawn nor a weed anywhere; grow in abundance all the choicest annual flowers. A couple of large vases of geraniums, ivies, etc., for trailing the sides. The veranda clothed in the many hued Jap. Imp. morning glories. I grow early radishes in flower borders before required for the flowers; the grapes being on wires 6 to 8 feet from the ground leaves the space open for berries and vegetables; have room for all and ordering more, and in addition shall grow our early cucumbers and melons. In setting our asparagus bed I sowed seed of the Elvira at two years; selected 20 most vigorous, whitest crowns, dug a pit two feet deep, 6 x 10 inches wide, oblong; filled with a mixture of well rotted (under shed) manure, sharp sand and loam with a few pounds of potash, tramped well; covered the crowns about 6 inches. Each fall I cut the old stalks close to ground and dress with 5 or 6 inches fresh horse manure. When frost is out of ground rake off the manure and give a liberal dressing of coarse salt; result: plenty of shoots daily of 3-4 to 1 1-4 inches in diameter and at 18 to 20 inches in height; are as tender and sweet as the choicest peas. In addition to all of above, which are "all present as accounted for" have space for four of the new grapes, a Burbank plum, Triumph peach and one of the new gooseberries. What we have done others may do and on rented home, too, and at so little cost. Send for Green's Catalogue, and if so far away give him your mailing orders—plant trees, vines and berries and grow them.—John Cretors, Leavenworth, Kansas.

Editor Fruit Grower: Please reply to the following in next issue of Fruit Grower and oblige reader—C. F. Mulford.

1st. Blackberries and Kansas black raspberries let grow full length and cut to stubs about Christmas last. Will they bear? And can I raise plants from raspberry tips this year?

2d. Can I raise plants from root cuttings of suckering raspberry and blackberry made next spring? How best raise largest number from one Eldorado and one Gault set last spring?

3d. Is the Larimer tile ditching plow a good thing every way?

4th. How best manage fruit trees set out last spring if they bloom and try to bear fruit this year? Some of my Bartlett buds look that way.

5th. Is there danger of injury to Loudon raspberry plants by smothering that were set out late last fall and a seven-inch furrow plowed over for winter protection and drainage? Soil is well tiled, clay loam.

6th. Can I raise layer plants from gooseberry that were two years old, set out last spring? They are Downings, S. Imp. Industry and Lancashire.

7th. How best trim peaches set last spring that were cut to a whip then and the whole year's growth left?

REPLIES:

No. 1.—If the plants are well established they will bear some fruit, but not nearly as much as though not cut back so severely. Yes, you can layer the tip plants of raspberry plants cut back.

No. 2.—Yes, if you know how. Growing plants from root cuttings requires the skill of a nurseryman. Cut into pieces two inches long, and plant in rich and sandy soil; cover with three inches of earth.

No. 3.—I cannot say.

No. 4.—Do not let newly planted pear trees bear more than one or two years.

No. 5.—No danger of smothering if the soil is removed in early spring.

No. 6.—Some gooseberries will not take root so easily as others. Cut off the old tops close to the roots now. When the young branches are a foot long (say June 1st) commence to bank up and continue to bank as the new growth extends.

No. 7.—Cut back more than one-half of the branches and top that grew last year. —C. A. Green.

How to Choose Paint.

It is probable that people are cheated in quality of paints they buy more often than in other things, because people in general know so little about them. It costs just as much time and labor to put on paint that lasts six months, as it does one that will last five years, so every person should get the information that will enable him to choose a good quality, made of pure white lead, instead of a cheap adulteration in which barytes is the chief ingredient. There are about twenty-seven brands of honest white lead, and there are numberless cheats. Every one who buys or uses paints can learn all about these, free of any cost whatever, if he will mention this paper and send his address on a postal card to the National Lead Company, 1 Broadway, New York city, for a free book on the subject. He will also receive some beautiful cards showing samples of colors, and pictures of twelve houses painted in different tints and combinations.

A new factory at Passaic, New Jersey, has recently been put in operation, that turns out two car loads of ENAMELINE per day.

Green's Nursery Co.:

Dear Sir: In regard to our transaction of $120 worth of trees, etc., I want to say now that I am entirely satisfied with our deal and I wish to commend you to the general public as an honest, upright nursery firm.—J. C. Comstock, for Mrs. M. M. Comstock, Indiana.

A WONDERFUL

Botanical Discovery

The Kava-Kava Shrub.

A FREE GIFT OF GREAT VALUE.

To all Sufferers from Kidney or Bladder Disorders, Bright's Disease, Diabetes, Dropsy, Rheumatism, Gout, Pain in Back, Female Complaints and Irregularities, Blood Impurities and other maladies caused by improper action of the Kidneys or Urinary Organs.

A few weeks ago our readers were informed of the discovery of the Kava-Kava Shrub, a new botanical product, of wonderful power in curing certain diseases.

The Kava-Kava Shrub (*Piper Methysticum.*)

The Kava-Kava Shrub, or as botanists call it, Piper Methysticum, grows on the banks of the Ganges river, East India, and probably was used for centuries by the natives before its extraordinary properties became known to civilization through Christian missionaries. In this respect it resembles the discovery of quinine from the peruvian bark, made known by the Indians to the early Jesuit missionaries in South America, and by them brought to civilized man. We have previously quoted Dr. Archibald Hodgson, the great authority on these diseases in which he describes the sufferings of both Hindoos and white missionaries and soldiers on these low, marshy swamps and jungles on the Ganges. He says:

"Intense tropical heat and moisture acting upon decaying vegetation renders these low grounds on the Ganges most unhealthy districts. Jungle fevers and miasma assail the system. * * * The Blood becomes deranged and the Urine thick and dark-colored. * * * Life hangs in the balance. Then when all modern medical science fails, safety is found in the prompt use of Kava-Kava. A decoction of this wonderful botanical growth relieves the Kidneys, the Urine becomes clearer, the fever abates, and recovery sets in, etc."

Our readers already know of the bringing of this wonderful shrub to Europe and America, and the success of the medicine Alkavis, which contains the active principle of the Kava-Kava Shrub, only in a much more concentrated and powerful form. We are glad to record the numerous extraordinary cures wrought by this great discovery.

Of all the diseases that afflict mankind, Diseases of the Kidneys are the most fatal and dangerous, and this being the case, it is but natural that the discovery of the Kava-Kava Shrub, Nature's Positive Specific Cure for Diseases of the Kidneys, is welcomed as a gift to suffering humanity, and endorsed not only by the public, but by the most eminent physicians, both of Europe and America. The fact that Alkavis is sent free for trial to sufferers from these diseases has had a great effect in making its remarkable benefits widely known. One person when cured naturally tells another, and so sufferers everywhere are testifying to the wonderful health restoring powers of this new botanical product. In the New York Weekly World, of Nov. 1st, the testimony of Rev. W. B. Moore, D. D., of Washington, D. C., was given, describing his years of suffering from Kidney disease and Rheumatism, and his rapid cure

VAN DEMAN PAPERS.

Styles of Orchard Planting.

Written for Green's Fruit Grower
by our Regular Contributor, Prof. H. E. Van Deman, Late United States Pomologist.

He who intends planting an orchard should first carefully consider the whole matter of how to do it. One of the important things is how far apart to plant the trees of the different kinds. It is fruit that we want when we plant an orchard, and the most and the best of it that it is possible to get on a given space. If it was timber for which the trees were being grown, they would necessarily be planted closer than for fruit, so that the upper parts of the trees would develop and not the side branches. A fruit tree requires more room in proportion to the size than a forest tree. We want it to have the full benefits of all the sunlight it can get, from top to bottom, so the branches, leaves and fruit will attain their fullest development. At first the trees will not need all the space allotted to them, that is, those that are planted far enough apart to not crowd each other when they are big; therefore, if we can properly use the intervening spaces without hurting, or, in any way hindering the growth of the trees it is so much gained.

Peach trees are often planted between apple trees for this purpose. I have done it, but do not like it. The peach trees are of quicker and more rampant growth and rob the apple trees to some extent. Dwarf pear trees are set in apple orchards sometimes, but this is objectionable; because the pear trees often need very different treatment from the apple trees, owing to their greater proneness to blight; and then, if planted deeply they will send out pear roots and live usefully long after the apple trees need their space. Apricot trees are sometimes planted between other trees in California, but this is not usually liked by those who have done it. The better way is, to plant each kind of orchard fruit by itself, filling up the spaces between the trees that are intended to remain the longest, with early-bearing varieties of the same species.

In different climates and soil the same species of fruit, or even the same variety behaves very differently, and requires to be planted at different distances. One rule as to distance apart will not work well for all places. Manuring and cultivation will, in a measure, make up for what is lacking in climate and soil, but not altogether so. The peach trees grown in Connecticut or Northern Michigan are very much smaller than those of Delaware or Missouri. The apple trees of New England and Michigan are far larger than those of Texas and the lower Atlantic coast, because the apple delights in a cool and moist climate. The rich prairies of Illinois or Iowa cannot grow such immense cherry trees as are found in the hill regions of Virginia and Pennsylvania.

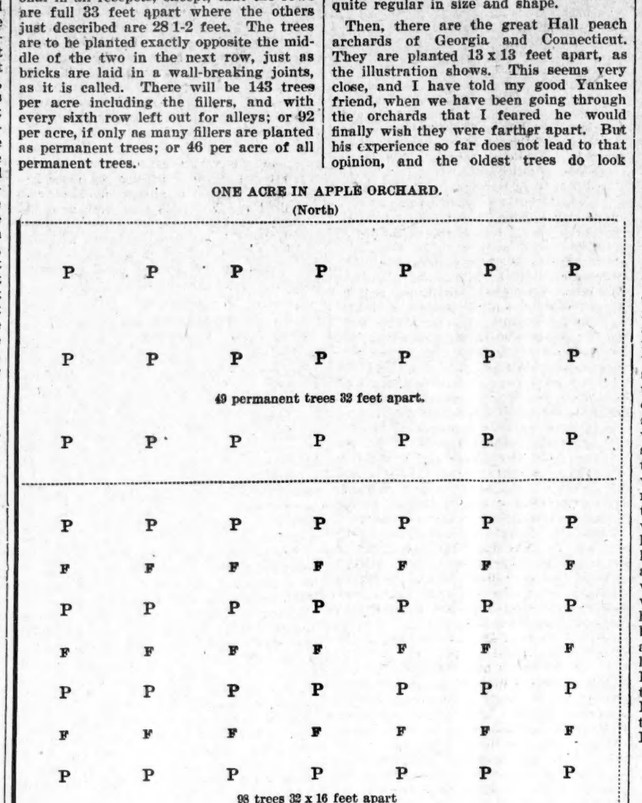
Where land is dear, economy of space is an important factor. The more trees we can get on an acre the less it costs per tree to cultivate them. I will describe several of the best styles of planting, of which I know, thinking that some of the readers may wish to use some of them this spring. In each case, fifteen feet is allowed on the south and west sides of the plots (as margin), which are supposed to be the outer edges of the orchard. The calculations are on one acre, which can be used as a guide in the planting of a tract of any size.

The style which is the most economical of space, is the "Hexagonal." It is sometimes called the "triangular" system, because each tree is at the corner of a set of equilateral triangles and it is also the center of a hexagon and the corner of other hexagons. The bees, which know how to economize material, use it in building their combs. I have used it in all the orchards I have planted in several States and like it the best of all. I have devised a system of filling up between the permanent trees with such as bear early, and in a different way from any I have seen used by others. Therefore, I call it the Van Deman Plan. It is given in Fig. 1. In the lower part of the diagram may be seen places for 156 trees per acre, one rod apart, with every sixth row left out, for an alley or road in which to drive wagons in gathering fruit, etc. The permanent trees are marked by the letter P, and are two rods, or 33 feet apart, the "fillers" are marked by F. In Michigan, New York and some other very favorable apple regions, it may be better to increase the distance to 40 feet between the permanent trees, making the fillers 20 feet apart. The distance between the permanent rows, east and west is 28 1-2 feet, which is a saving of 4 1-2 feet over a square system, and yet, not getting the trees any closer together. In the middle space of this diagram there are places for 104 trees, half being permanent and half fillers. The wide spaces run north and south, which is thought preferable in the West, where the prevailing violent winds are westerly, and the hot sunshine, of course, from the south. This is my favorite style for planting an apple orchard, as it gives about a sufficient number of trees to the acre, and nice room for getting through all parts with a wagon. It also is just right for planting six rows of corn in the wide spaces, until the trees become large enough to need all the ground. The upper section shows places for 52 trees per acre, after all the fillers are removed. Here, the plow and cultivator can be run three ways, which is very handy for thorough tillage.

ALTERNATE PLAN.

The "alternate" plan is like the hexagonal in all resepcts, except, that the rows are full 33 feet apart where the others just described are 28 1-2 feet. The trees are to be planted exactly opposite the middle of the two in the next row, just as bricks are laid in a wall-breaking joints, as it is called. There will be 143 trees per acre including the fillers, and with every sixth row left out for alleys; or 92 per acre, if only as many fillers are planted as permanent trees; or 46 per acre of all permanent trees.

ONE ACRE IN APPLE ORCHARD.
(North)



(South)

WELLHOUSE PLAN.
49 permanent trees 32 feet apart; 91 trees 32 x 16 feet apart.

My friend, Judge F. Wellhouse, of Kansas, is known to nearly all readers of rural papers as "The Apple King of America," and he is such most truly, although there are others who are now about to equal or exceed him in extent of apple culture. He and son have over 1,600 acres in apples now. He plants 32 x 16 feet in plain squares, and all of the same varieties in blocks. This makes 98 trees per acre. The lower part of Fig. 2, shows this. As the trees attain age and require more space, he cuts out one-half, leaving them 32 feet apart each way, and 49 trees per acre. He has now mixed the varieties as indicated in the diagram, but has planted all of a variety in one block, using such kinds as bear reasonably early. But if such kinds as Missouri were planted as fillers, it would seem to me that they serve a better purpose than if planted each one by itself.

PARKER EARLE PLAN.

That eminent horticulturist, Mr. Parker Earle, who is now in the famous Pecos valley of New Mexico, planting apple orchards by the hundred acres, has devised a plan that is very good. The trees are 16 feet apart east and west, and 20 feet north and south, except that every sixth row is left out for an alley. As soon as the trees begin to crowd it is intended to cut out all the intermediate rows, leaving the 63 permanent trees per acre, 32 x 20 feet apart, and in plain rectangles. By cutting out every other row diagonally, still later, the trees will be in diagonal squares, 42 feet apart, and 31 1-2 trees per acre. This is a very good plan also for such sections as require the trees to be very wide apart when they get old.

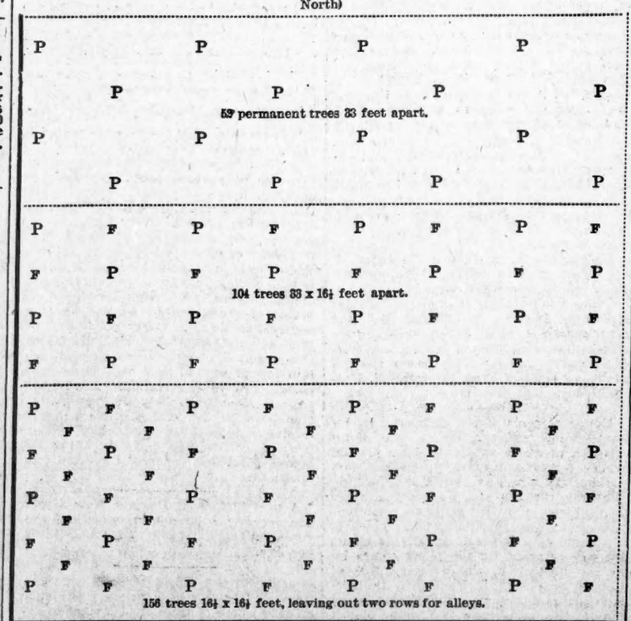
OLDEN PLAN.

Of course we have all heard of the Olden fruit farm in Southern Missouri. I made three visits there to see it at different times of the year, and was well paid. Nearly all the trees are either apple or peach. More is added each year, 960 acres more having been planted last spring. The older parts are in good bearing condition. The leading spirits in the enterprise are my old friends, President J. C. Evans and Secretary L. A. Goodman, of the Missouri State Horticultural Society. Their plan is to plant in plain squares, the apples being 25 x 25 feet apart, making 64 trees per acre. This is rather close for some sections, but there the apple begins to bear early, and yet lives and bears to a very old age. By cutting out each alternate diagonal row, the trees will be left 37 1-2 feet apart and 32 trees to the acre. It may seem presumptuous in me to offer suggestions, but it does seem that if the varieties were mixed in the row, and the early bearing ones thus cut out it would be better than having each variety in a block to itself.

The Olden plan for peach orchards is 16 1-2 x 16 1-2 feet in plain squares, as in Fig. 3. There are 169 trees per acre. At convenient distances for the passage of wagons, roads are left which make a series of blocks, which are, on the whole, quite regular in size and shape.

Then, there are the great Hall peach archards of Georgia and Connecticut. They are planted 13 x 13 feet apart, as the illustration shows. This seems very close, and I have told my good Yankee friend, when we have been going through the orchards that I feared he would finally wish they were farther apart. But his experience so far does not lead to that opinion, and the oldest trees do look very thrifty. However, he feeds them abundantly with plenty of potash and whatever else they need. He also keeps them well pruned back. There are 280 trees per acre. The Georgia orchard is laid off into blocks 1000 x 500 feet in size with roads or streets at these distances; which are named for the States one way and for eminent horticulturists the other. All the fruit must be carried by hand to the wagons, which, however, are conveniently near.

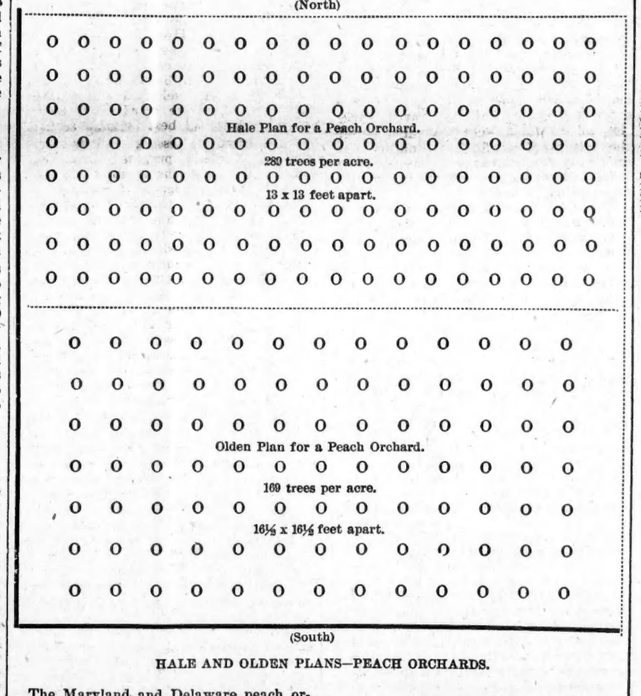
ONE ACRE IN APPLE ORCHARD.
North)



(South)

HEXAGONAL PLAN.
52 permanent trees 33 feet apart, or 104 trees 33 x 16½ feet apart, or 156 trees 16½ x 16½ feet after taking out two rows for alleys.

ONE ACRE IN PEACH ORCHARD.
(North)



(South)

HALE AND OLDEN PLANS—PEACH ORCHARDS.

The Maryland and Delaware peach orchards are set wider, 18 to 20 feet not being uncommon. But they are allowed to grow to quite large size, and, some might say, too large and limby for a profitable fruiting. The Michigan peach orchards are set somewhat closer than those of the Chesapeake peninsula. The best that I saw in the famous Saint Jo. region were about 18 feet apart in squares and were just about right to have each space covered at one round of a wide harrow. In the northern part of that State the trees are set closer because they do not develop to so great a size. In Texas and California peach trees grow to quite large size, but in the latter State, especially, they are pruned back severely and persistently. One can then see the most systematic orchards in the country. The common square and hexagonal plans are those mostly used, and the distance apart is from 18 to 24 feet.

The Lean All Steel Harrow, which is advertised in our columns, possesses much to recommend it. As indicated above it is constructed entirely of steel and contains no castings or malleables that are so likely to break. All bars, and the important corner braces are of angle steel. The top lever adjusts the teeth to any desirable angle enabling the operator to tear up the earth at a considerable depth, or to smooth it on the top. Write the Roderick Lean Company, Mansfield, Ohio, for catalogue and prices and mention this paper.

NEW MONEY MAKING INVENTION.

I am so thankful to Mrs. Wymen for her experience. Being out of employment, I ordered 2 dozen of the New Patent Aluminum Cases, for attaching photographs to tombstones, from M. World Mfg. Co., Columbus, Ohio. Cases are indestructible, will last forever and make a beautiful appearance on any monument. Anyone can put it on in 2 minutes. I sold 6 the first day, profit $12. In 8 days my profits were $49. Everybody is glad of a chance to buy, as they are handsome and yet so cheap. Sister made $19 last week selling elegant Aluminum door-plates and house numbers from the same firm. Anyone can do as we if they try. JOHN C. B——

EVERETT'S NEW OFFER.

To introduce our Perfume, we will send a case post-paid for 10 cents. We will mail with it, *absolutely free*, a beautiful gold plated Garnet and Opal Ring. Send 10 cents in stamps; we will delight you. B. S. EVERETT & CO., Lynn, Mass.

There's A Boy in the House.

A racket, a rattle, a rollicking shout
Above and below, and around and about;
A whistling, a pounding, a hammering of nails,
The building of houses, the shaping of sails;
Entreaties for paper, for scissors, for string,
For every unfindable, bothersome thing;
A bang of the door, and a dash up the stairs
In the interest of burdensome business affairs,
And an elephant hunt for a bit of a mouse
Made it easy to hear there's a boy in the house.

Experience with Tree Peddlers.

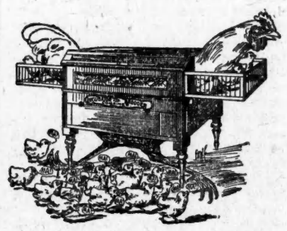
In the spring of 1895, I bought some fruit trees from a nursery company at Rochester, N. Y. The time of shipment was during that warm spell in the early spring. The trees were large and thrifty. On account of a misunderstanding, the trees were at the depot three days. The small leaves which had started were all turned yellow. I set them with the usual care, and lost but six per cent. The trees were from six to seven feet high, very fine, strong and vigorous, and cost but $2 per dozen. During the summer, a tree agent representing some well-known nursery called upon me and wanted to sell me some strawberry plants and trees. He acknowledged that the trees I had were nice, but said that his at 50 cents each would be much better. To make a long story short, I ordered six German prune trees, and with these he gave me 50 Crescent strawberry plants which they "were selling at 85 cents per dozen." I afterwards found that I could buy the strawberry plants at $2.50 per 1,000. In the fall he brought the trees, and they were not so good as those from the other nursery company at 16 cents each. I set them carefully, and last spring not one was living. After he delivered the trees, he said that he had "a package that was left over"—party had moved away. The amount to be collected on this package was $11.50. If I would take them, he would make a liberal reduction. I told him I would give no more than I could buy them for at Rochester, which was about $2.11. He was very indignant, and left. He came back later, and said that I could have them. I didn't want them then at that price, but offered him $1.50. He left the goods and I do not think that, to-day, I have four specimens to show.—Rural New Yorker.

FOR SALE

Three-hundred barrels extra-fine Baldwin and Spy apples in cold storage at Rochester, N. Y., for sale between now and June. Correspondence solicited.—C. A. Green, Rochester, N. Y.

A $100 BICYCLE
will be given for a Club of Subscribers for GREEN'S FRUIT GROWER. This is the Best Grade of Columbia Wheels. See particulars on PAGE FOUR.

The Reliable Hen.



The incubator business is taking on astounding proportions. It would not have attained its present dimensions had it not been for the success of the machines in actual practice. There has been too much success in the use of incubators and too much money made by this process to claim, at this late day, that the most improved incubators are anything but successful and profitable when correctly managed. We are led to these reflections by receiving the superb 168-page catalogue of the Reliable Incubator & Brooder Co., of Quincy, Ill. Their machine is one of the most popular and most largely used. It is made in a careful and workmanlike manner and of the very best materials. Too much cannot be said of the Reliable regulator. Send for catalogue to the Reliable Incubator & Brooder Co., Quincy, Ill. If in writing them you state that you are a subscriber to Green's Fruit Grower you can get it free.

"Potash in Agriculture"

is the title of a pamphlet, published by the German Kali Works, No. 93 Nassau Street, New York, N. Y.

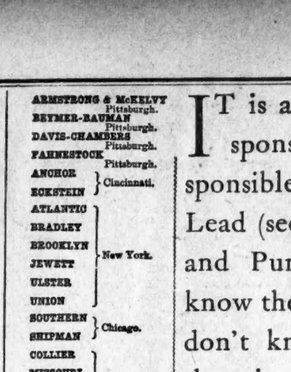
The contents embody a collection of results obtained with fertilizers at our experiment stations. It would certainly pay every farmer to write for a copy of this book, which we understand is sent free.

FREE Unitarian Literature. Address MRS. B P. CROSSMAN, Rochester, N. Y.
Please mention Green's Fruit Grower.

We offer Green's Fruit Grower in yearly clubs of five subscriptions all for $1. Or Weekly Tribune and Fruit Grower for 50 cts. Or Fruit Grower with Green's six books or Green's four books for 35 cts.

35c PATTERNS--10c

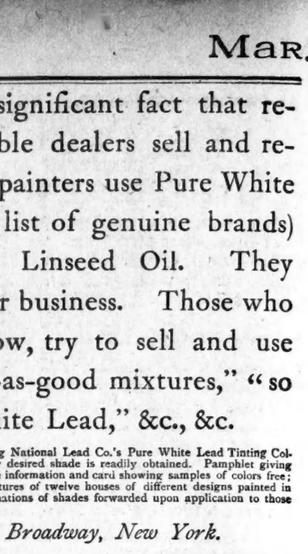
TWO PATTERNS your choice of those illustrated and described below and GREEN'S FRUIT GROWER One Year, all for 50 Cents, less than the retail price of the patterns alone.



6984—Ladies' Five-Gored Skirt.

The mode is adapted to all seasonable fabrics, including cloth, serge or silk and may be plainly completed, or decorated in any preferred manner with velvet ribbon, narrow flounces or flat bands of jet, braid or galloon as there is a growing tendency to trim many of the newer skirts.

To make this skirt for a lady in the medium size will require four and one-half yards of forty-four-inch-wide material. The pattern, No. 6984, is cut in sizes for a 22, 23, 26, 28, and 30-inch waist measure, and retails for thirty cents.



6995—Ladies' Norfolk Basque.
6906—Ladies' New Bell Skirt.

All seasonable fabrics may be employed in developing, including serge, canvas, covert, broadcloth, mixed cheviots or striped novelties, so desirable for spring, summer and early autumn wear.

To make this basque for a lady in the medium size will require two and one half yards of forty-four-inch wide material. The pattern, No. 6995, is cut in sizes for a 32, 34, 36, 38 and 40-inch bust measure, and retails for twenty-five cents. The skirt, No. 6906, will require four and three-fourths of same width goods, and is cut in sizes for a 22, 24, 26, 28 and 30-inch waist measure. It retails for thirty cents.

6988—Misses' Waist.
6989—Misses' Four-Gored Skirt.

The skirt is a new and especially stylish model which consists of a front gore, two side gores and a straight back breadth. It fits the figure smoothly across the front and sides and is gathered at the back to fall at the lower edge in soft and graceful effect.

To make this waist for a miss in the medium size will require two and one-half yards of forty-four-inch wide material, and to make the skirt will require three yards of the same width material.

The waist pattern, No. 6988, is cut in sizes for misses of twelve, fourteen and sixteen years, and retails for twenty-five cents. The skirt pattern, No. 6989, is cut in sizes for Misses of twelve to sixteen years, and retails for thirty cents.

6973—Ladies' Waist.

All seasonable fabrics may be employed in making combinations of cloth and velvet or cloth and silk. Plain and novelty in all woolen goods is also commendable.

To make this waist for a lady in the medium size will require three yards of forty-four-inch wide material. The pattern, No. 6973, is cut in sizes for a 32, 34, 36, 38 and 40-inch bust measure and retails for twenty-five cents.

6890—Ladies' Wrapper.

Figured wool challis is chosen for this neat and serviceable gown, so admirably adapted for home wear. The standing collar and sleeve tabs are of ruby velvet, outlined with narrow lace edging, while the fanciful girdle of ribbon velvet in the same warm tint confines the fulness at the waist.

All serviceable materials may be employed in making this dainty gown, such as challis, delaine, cotton or wool crepon, etc.

To make this gown in the medium size requires five yards of forty-four-inch wide material. The pattern, No. 6890, may be had in sizes for a 32, 34, 36, 38, 40 and 42-inch bust measure, and retails for 35 cents.

To get BUST measure, put the tape measure ALL of the way around the body, over the dress close under the arms.

Order patterns by numbers and give size in *inches*. PRICE of each pattern 10c. postpaid. Both of above patterns and GREEN'S FRUIT GROWER one year, 50 cents.

ADDRESS ALL ORDERS TO

GREEN'S FRUIT GROWER,
ROCHESTER, NEW YORK.

Apples All the Year by Cold Storage.

Professor Craig, of the Experimental Farm, Ottawa, Canada, takes a hopeful view of the matter of keeping apples in cold storage. It may be questionable whether Professor Craig is wholly right in his optimistic views, but here is what he says:

"Before long you will see a revolution in the apple trade. Winter apples will not be a necessity. Cold storage will solve the difficulty. Probably before two years are over, you will see in every fruit growing district cold storage houses on the co-operative plan based on the cold storage buildings at the World's Fair. Fall apples put into cold storage buildings where the temperature is 34 degrees may be kept an indefinite length of time. Thus winter apples will not be necessary. When I was at the World's Fair in the middle of the hot season I saw in good condition Duchess of Oldenburg apples which had been ripened early the previous summer and kept in cold storage. While in Montreal recently I noticed in the new cold storage building beautiful California pears."

Des Moines Incubator Record!!

Four hundred eggs were purchased at a commission house, incubated for 18 days at Des Moines, Iowa, then hauled one mile by express wagon to the depot where the incubator and the eggs were loaded into the express car, and started on their 375 mile journey to be hatched out two days later. This transfer was made during the coldest wave of the season.

On arrival at the "Windy City" another haul was made by express wagon to the Exhibition hall in 20 degrees below temperature. Still they hatched until the machine was literally filled with chickens.

The Fence that Turns Everything.

The fence here shown is made with the Duplex Automatic Woven Wire Fence Machine, which is made entirely of wood and malleable iron, and is so simple and easily operated that any one who knows how to turn a grindstone can take it right into the field or any place and make 40 to 60 rods a day of the best fence on earth, horse-high, bull-strong, pig, chicken or rabbit-tight at a cost for the wire of only 12 to 20 cents a rod. Messrs. Kitselman Bros., Ridgeville, Indiana, whose advertisement appears elsewhere in this paper, claim this Duplex Automatic Machine is the result of their ten years' experience in the manufacture of woven wire fence machines and is Perfection Itself.

Lands in Central Wisconsin

Are now as desirable as any in the market. The lands particularly in the central and northern part of Wisconsin, are being rapidly taken up by actual settlers.

The most salable are the timber and meadow lands now ranging in price from $6.00 to $12.00 per acre. A few months hence their value will be greatly increased.

For a home or for investment no luckier chance in the West has ever before been offered. No better farming land exists anywhere.

Schools and churches abound everywhere.

For further information address or call upon W. E. Powell, General Immigration Agent, 410 Old Colony Building, Chicago Ills.

The Sprayer Industry.

The Lenox Sprayer Co., of Pittsfield, Mass., have just increased their capacity for the manufacture of the United States Standard Bordeaux which they make in concentrated form, put up in gallon cans ready to be mixed with 49 gallons of water. Capacity of their building is 50,000 gallon cans a season.

The Lenox people are running their factory on over time. Their make of Sprayers is well-known all over the country. A large order has just been received from Cape May, South Africa. In our January number we had the pleasure to report a shipment they have made to Bombay, India.

This concern makes twenty varieties of spraying outfits to be drawn by horses. Also Knapsack Sprayers in copper and galvanized iron suitable for the field and orchard.

Their catalogue, this year, contains many valuable suggestions to fruit-growers, and improvements and perfections. Our readers will do well to send for their free catalogue. Address The Lenox Sprayer Co., Pittsfield, Mass.

A Big Corn Crop.

Last spring $500.00 were offered in prizes for the largest crop of corn grown on one acre in any part of the United States. Twenty-three different varieties of corn entered into the competition, but it is a singular fact that the largest crops reported were of the Iowa Silver Mine Corn, a new variety which was introduced last year. It was an Iowa farmer who won the first prize on a crop of 202 bushels and 50 pounds of corn in the ear, which, when shelled, amounted to 215 bushels. This is, with one exception, the largest crop ever grown in the world. In Arkansas this same variety yielded 188 bushels, in Nebraska and Ohio 135 bushels, and in Texas 128 bushels.

For more full information in regard to this most wonderfully large yield, address the Iowa Seed Co., Des Moines, Iowa, who will send copy of their large illustrated catalogue to all who mention this paper.

REYNOLDS

EXPERIENCE IN HORTICULTURE.

Nature vs. Art in the Creation of Varieties.

We boast of our rapid progress in both the art and the science of horticulture, yet we must humbly confess that much the larger portion of those varieties of the different species of fruits, most popular in the markets of our country and of the world, owe their origin to chance seedlings of natural selection, rather than to selections made by man and crosses in accordance with the teaching of science. Man, undoubtedly had some agency in the origination of every variety of fruits now cultivated, in effecting crosses by bringing different varieties into proximity so that chance cross pollination was possible, but in so far as intelligent, systematic, scientific pollination is concerned we have yet made but little progress in supplanting old market varieties, chance seedlings, with the creations of artificial pollination. Yet quite a good many horticulturists have been engaged during the latter half of the nineteenth century in the work of producing new varieties by uniting varieties containing the largest number of desirable qualities in the hope of producing something superior to either parent.

And here allow me to remark that some of our horticultural teachers speak quite carelessly when referring to the crossing of varieties and species. In an address that I read with great pleasure, recently, by an experienced horticulturist, near Boston, before a large meeting of fruit growers in Boston, the following language was used: "The process of hybridization is simple, whether by the wind, or by insects, or by the hand of man—simply the commingling of the pollen of two species and the production of a seedling from this union." This may have been a thoughtless utterance, but it conveys an erroneous idea that might mislead those not informed. How is it possible to commingle the pollen of two species, or two varieties of fruit? To state the operation more accurately: the process of hybridization is the bringing of the pollen of one species in contact with the stigma of the flower of another, so that an ovule in the ovary may be fertilized. To do this effectually it is necessary to remove the stamens from the female parent, before they have shed their pollen and then to keep the flower covered, so that neither wind nor insects shall convey pollen from some other flower, until the pollen of the male parent is ripe, when it is carefully removed to the stigma of the female parent. There is no commingling of pollen here, but a studied effort to prevent commingling by preventing access to any other pollen than that of the species intended for the male parent. I suppose, however, that we ought to treat the blunder leniently, inasmuch as the author of the address pronounced Loudon the best red raspberry.

But, to return to our subject, the New England States, Massachusetts largely, originated a large proportion of our leading market varieties of apples, but they produced them by recognizing their value among chance seedlings. Among these are Baldwin, Rhode Island Greening, Roxbury Russet, Hubbardston's Nonsuch, Golden Sweet, Peck's Pleasant, Porter, Lyman's Pumpkin Sweet, Sutton's Beauty, Talman's Sweet, Twenty Ounce and Westfield, Seek no further. Here is a fine list of our preferred market varieties, all of which were originated before the science of artificial pollination was understood and, strange to say, none of them have been superseded by the product of scientific propagation.

New York State may claim to have furnished many of our most excellent varieties, among which the following are most familiar: Chenango Strawberry, Early Joe, Early Strawberry, Esopus, Spitzenburgh, Green Newtown Pippin, Yellow Newtown Pippin, Jonathan, Melon, Northern Spy, Stump, Swaar and Wagener. Early Joe, Melon and Northern Spy originated on the farm of Heman Chapin, East Bloomfield, Ontario County. New Jersey may lay claim to Maiden's Blush, Primate, Yellow Bellflower and Tompkin's County King. Several very good and quite profitable apples were of foreign origin, among which Duchess of Oldenburgh, Fameuse, Gravenstein, Pomme Grise and Red Astrachan are prominent. Early Harvest and Early Sweet Bough are believed to be of American origin, but it is not known to what State to credit them. The same is true of that noble old autumn apple, Fall Pippin, which is believed to be a seedling of the Holland Pippin.

PEARS.

Quite a number of our best market pears are of foreign origin, mainly of France and Belgium. Those of French origin are Clairgeau, Gifford, White Doyenne (or Virgalien), Duchess of Angouleme, Josephine of Malines, Louise Bonne of Jersey, and Vicar of Winkfield. The following are believed to have originated in Belgium: Belle Lucrative, Anjou, Bosc, Diel, Flemish Beauty and Winter Nellis. The United States is to be credited with quite a long list, namely: Bloodgood, Brandywine, Buffum, Clapp's Favorite, Dana's Hovey, Dearborn's Seedling, Howell, Lawrence, Osband's Summer, Seckel, Sheldon, Tyson and B. S. Fox, Colonel Wilder and P. Barry among Fox's seedlings, originated in California. These three and Clapp's Favorite are the only ones, in this list, known to have been created by crossing the pollen of one variety upon the pistillate organs of the other. Most of these varieties were originated before the art of artificial pollination was known and practiced. Perhaps, when the science of plant breeding is fully mastered varieties will be produced greatly superior, in all respects, to any now known. Of the pears mentioned it is doubtful whether there are more than half a dozen that can be grown for market, with profit, and not many more varieties of apples.

PEACHES.

The list of peaches now recommended for market culture is quite short and most of them of American origin. Among the natives I would name: Crawford's Early, Crawford's Late, Foster, Hale's Early, Morris White, Mountain Rose, Oldmixon Freestone, Red Cheek Melocoton, Smock, Stump the World and Hill's Chili. Elberta and Crosby are on trial. Yellow Alberge, French, Early Rivers and Salway, English are profitable in special localities and some claim that there is money in the earlier semi-clings: Alexander, Waterloo, Beatrice, Early Louise and Early Rivers, the latter two English, but they are so apt to rot and better varieties from the South filling our markets at the same time render their production for market rather hazardous. Early Rivers is probably the most reliable. There is more encouragement in artificial breeding of peaches than of apples or pears as the fruit can be seen so much sooner, but I am not aware that any superior varieties have yet been produced by that method.

We are now making out quite a long list of plums and cherries, but when we come to reduce the list of varieties to those that are profitable, commercially, it is pretty small. Most of the Japan crosses I suppose are made scientifically, but I do not think it is yet demonstrated that any of them can be grown profitably in competition with the best native and European varieties. They are desirable for the amateur because of their bright colors, fitting them to adorn the table. The list of cherries may be cut down to a pretty small number, when planting market orchards, and the greater portion of them have been cultivated many years, but I do not think the choicest were produced by human selection and artificial pollination. Possibly Windsor may have been originated in that way.

GRAPES.

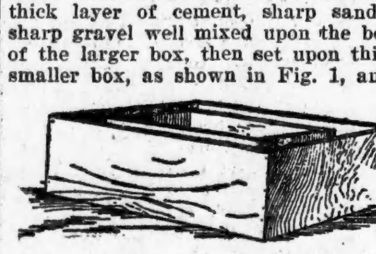
When we come to grapes we find that a greater number of those offered in nurserymen's catalogues were produced by intelligent, scientific breeding, than of any of the larger species of fruits. Rogers, Rickards, Moore, and others have worked long and patiently in attempting to cross such varieties as they believed possessed great merit and they have certainly produced varieties of great excellence, such as Brighton, Diamond, Wilder, Lindley, Gaertner, Agawam, Merrimack, Barry, Herbert, Salem, and others, but, somehow when we seek those varieties on the market we cannot find them in any considerable quantities. Growers do not seem to find them profitable. Our markets are filled with but four or five varieties and, although those do not suit the tastes of the connoisseur, they meet the popular demand. Those varieties are Delaware, Concord, Worden, Niagara and Catawba. All of these with the exception of Niagara, are chance seedlings. The Niagara was the result of long study and earnest efforts to produce a hardy, productive, acceptable white grape by Mr. Claudius L. Hoag, of Lockport, assisted by his partner, Mr. B. Wheaton Clark, sometime in the seventies. He collected and planted in his grounds almost all known native varieties, with the view of testing and comparing. After some years he came to the conclusion that Concord and Cassady combined many of the qualities in a hardy, productive, popular grape. He used the first for the pollen and produced Niagara, a white grape which, although not satisfactory to the amateur, seems to meet the popular demand, for it floods our mid-autumn market almost to the exclusion of other sorts. Possibly its universal prevalence may be, to some extent, due to the enterprise of its originator in securing its dissemination through a syndicate, or joint stock company. At any rate, it has been planted from Canada to Florida and is one of the first grapes seen in our markets and the last with the exception of Catawba. I think that scientific breeding is being applied more generally to the small than the large fruits because the results are sooner evident. Several experienced originators are experimenting with strawberries, raspberries, currants and gooseberries and are producing varieties of great promise.

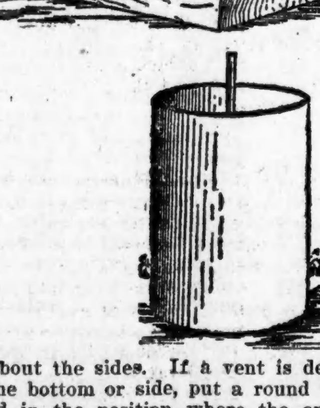
OBSTACLES IN THE WAY OF SUCCESS.

It is a matter of great surprise that, when so many men of scientific attainments have expended so much effort, of late years, in attempts to create improved varieties of fruits, so little has been achieved and that so few of the newer varieties are recommended by experienced horticulturists to be planted in a commercial orchard. How can this fact be explained? What obstacles are to be overcome before success can be attained? In the animal kingdom, breeders have created breeds by careful selection and crossing until our old, native breeds have nearly disappeared in our best farming sections and new breeds possessing qualities adapting them to special purposes, taken their places. In crossing the pollen of one plant upon the female organs of another, we bring different cells together (for the pollen grains are cells) and the ovules of the female parent are cells and by the union of these two cells seeds are produced from which trees or plants are raised bearing fruit differing from either of the parents. Now it is impossible for the originator to know which of those cells is to have the greatest influence on the resulting cell, that is, which one will bestow the most of its quality and characteristics upon the cells of the offspring, for the cells determine the plants and fruits. Stock breeders talk a great deal about prepotency in the male, that is, ability to confer the most of his character upon the joint offspring, why may there not be something of prepotency in plants so that one of the parents may confer a great deal more of its character upon the offspring than the other. The result would be that the new seedling would not exactly blend the characteristics of the two fruits but would probably much more nearly resemble one than the other. There can be little doubt that plant-breeding is a complicated pursuit but it will yet be so mastered as to become an exact science.—P. C. Reynolds.

Farm Conveniences of Cement.

The use of cement for stable floors is becoming more and more general each year. There are other uses for the same material about a farm, two of which are suggested in the accompanying illustrations. One is a cement watering trough made by using two wooden boxes of different sizes to form a mold. Put in a thick layer of cement, sharp sand and sharp gravel well mixed upon the bottom of the larger box, then set upon this the smaller box, as shown in Fig. 1, and fill





in about the sides. If a vent is desired, in the bottom or side, put a round bit of wood in the position where the opening is desired, as the cement is being filled in. The second convenience is a lawn and garden roller. Get a sheet of sheet iron and fit a disc of wood into one end to make it a perfect cylinder. Bore a hole in the exact center of the disc to insert an iron rod. Place on end, with the disc end down. Select a round iron rod for the core of the roller, and drive it, through the hole in the disc, a few inches into the ground, keeping the rod exactly in the center of the cylinder at the top. The mold, as seen in Fig. 2, is now ready to fill with cement. A light handle is attached to the iron center, and the roller is complete. Use the best cement, the sharpest of sand and gravel and mix thoroughly, that every particle of the cement may be wet. Round off all sharp edges when the articles are taken from the molds.—American Agriculturist.

Catalogues Received.

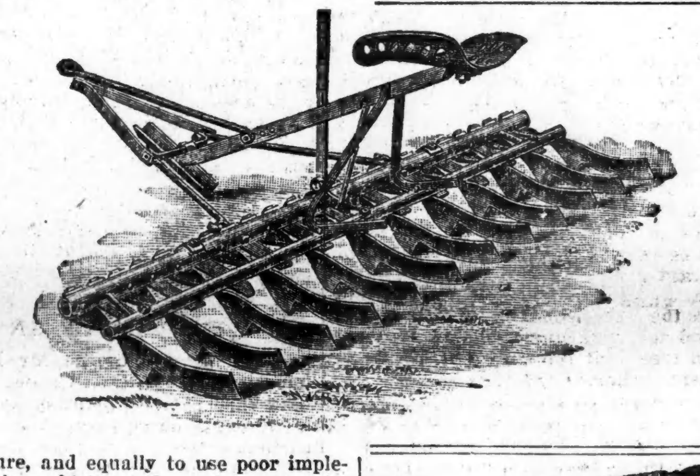
S. L. Allen & Co., 1107 Market St., Philadelphia, Pa., make this year as usual one of the neatest catalogues that comes to our desk. They are offering several new Planet, Jr., tools this season, the most interesting being, perhaps, their No. 4 and No. 7 hill and row garden seed drills, fertilizer and pea drill—special horse hoe for beet cultivation. There are too many new features to mention them all. Just write for their catalogues that they will be pleased to send you free and post yourself on the improvements they are making. Be sure to mention Green's Fruit Grower when you write.

H. W. Buckbee, the very much alive seedsman of Rockford, Ill., has sent us his 1897 "Seed and Plant Guide," which he will gladly send free to all the readers of the Fruit Grower who write for it and mention the paper. Some of its leading features are Buckbee's Great Bonanza Artichokes, Buckbee's New Golden Lima Bean. Four new varieties of cabbage, a quality that he claims are without superiors; new varieties of carrots, cauliflower, cucumbers, evergreen sweet corn, lettuce, musk and water melons, onion, pumpkin, in fact everything that could be desired in garden and flower seeds. Remember his catalogue is free. Write for it now. Address H. W. Buckbee, Rockford, Ill.

Thrift the Greatest Economy.

BY HENRY STEWART.

Thrift means good husbandry, economical management of property, and of course, general industry. All these virtues bring success in every enterprise. Every failure is the result of mistakes by which bad management leads to waste of labor and material. Thus it is unthrifty and wasteful, and the reverse of economy, for a farmer to use poor seed; to fail to make his soil rich by manure or fertilizers,



or culture, and equally to use poor implements by which good work cannot be done.

Now it has been proved by many years experience—that of the writer of this note has been twenty-five years very nearly—that the best harrow for all purposes, the most effective in its work as above described, the most durable and easy to work with, is that one well named the "ACME" Pulverizing Harrow, Clod Crusher and Leveler, for it stands at the head of the whole list of implements of this kind, as has been shown by the complete satisfaction of every farmer who has used it. It is practically everlasting, and is now forty per cent. less in price than it was a few years ago. The mere sight of it (see accompanying illustration) shows to the practical farmer, that the work done by it must be the best and most effective for the growth of crops.

The Wagon.

It is only recently that the question of making the wagon a labor saver to the horse and a convenience to man, has been considered. By the use of low down wheels the wagon for loading purposes has been brought to a convenient height. This broad tired wheel is probably worthy of more consideration on account of its not sinking in the soil as does the ordinary wheel. There are millions of wooden wheels in use to-day. These will soon be replaced by all steel broad tired wheels. Just as fast as the steel wheels with oval staggered spokes become known, they will take the place of the wooden ones and save mankind a vast amount of annoyance and expense.

The Electric Wheel Co., Quincy, Ill., are making the staggered oval spoke, broad tired wheel at a remarkably low figure. These wheels are made to fit any axle without extra charge and are also made of any size you want and with any width of tire without extra charge.

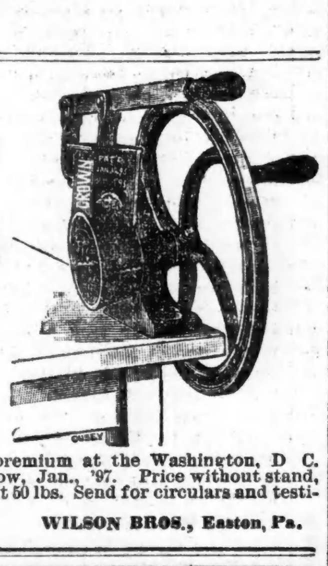
Their catalogue is free if you mention this paper.

Doubles the Pleasure of a Drive.

A fine carriage doubles the pleasure of driving. Intending buyers of carriages or harness can save dollars by sending for the large, free catalogue of the Elkhart Carriage and Harness Mfg. Co., Elkhart, Ind.

How to Ship Fruit.

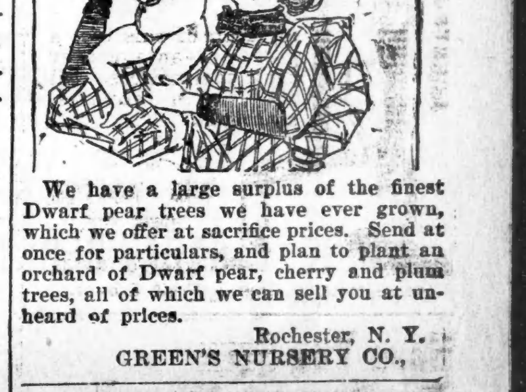
If interested in fruit it will pay you to write the Pierce-Williams Co., South Haven, Mich., whose advertisement appears in this issue, for a copy of their Fruit Package catalogue and price list. They make a specialty of berry boxes and climax baskets.

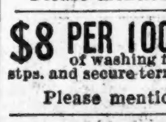


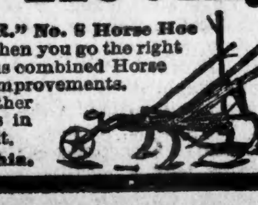
Green's Four Books on Fruit Culture—New Edition for 1896.

Notice that we offer Green's Fruit Grower, with Green's Four Books, on Fruit Culture, or Green's Fruit Grower, with Green's Six Books, one year, for 35c.

We have recently printed a new edition of Green's Four Books. The demand for these books has been so great that we have lost record of the number of editions printed, but altogether over 100,000 copies have been issued and sold, thus indicating the interest taken in Fruit Culture by people. Those interested in gardening or orchards desire some book which they can refer to at various seasons of the year, as pruning, planting, spraying, harvesting, or other similar work progresses. These books are devoted: First, How We Made the Old Farm Pay. Second, Peach Culture. Third, The Propagation of Fruit, Plants, Vines and Trees. Fourth, General Fruit Instructor, all under one cover. Formerly these books sold at 25c. each. All under one cover for 25c., or with Green's Fruit Grower for 35c.







Green's Six Books—New Edition for 1897.

The demand for these books has greatly exceeded our expectations, and we have been obliged to print edition after edition until over 100,000 copies have been printed. The present edition is greatly enlarged and improved. Currant, Gooseberry and Persimmon culture having been added to the books, leatherette cover, new illustrations, additions, etc., without increasing the price.

These Books are devoted: First, to Apple Culture; second, to Plum Culture; third, to Plum and Cherry Culture; fourth, to Raspberry and Blackberry Culture; fifth, to Grape Culture, and sixth, to Currant, Gooseberry and Persimmon Culture.

This combination makes a handy book of reference for the fruit grower. It is offered, post-paid, for 25c. or it will be mailed with Green's Fruit Grower, one year, for 35c.

TWENTY YEARS AMONG FRUITS

Making the Best of What we Have

Written especially for Green's Fruit Grower
By L. B. PIERCE.

PRACTICAL HINTS.

In many sections of the North Central States, the thermometers have gone 18 degrees or more below zero, which means considerable loss of peaches; the tenderer cherries and plums, and considerable injury to grape vines and blackberry bushes. The enormous apple crop of the past autumn has so diminished the vitality of most trees as to preclude a very heavy crop of apples, and it is possible that tender raspberries in sections where there has been but little snow are injured to some extent. Altogether there will be some disappointment, and possibly hardship, but it will not be an unmixed evil. It should lead to more careful husbanding of the resources that are left, and the bending of every energy to the fullest and finest production of such fruits as remain. A partial crop of raspberries and blackberries, will mean a better price for what do grow and Southern growers below the winter-killed line will meet with a better shipping demand. In sections where other berries promise a short crop, strawberries will be used in larger quantities, and growers far North whose berries have been under a heavy blanket of snow, will meet with a good Southern demand, which will make the home market buoyant, and capable of using every good berry grown at remunerative prices. Pears, hardy plums and apples, will not have to buck against a market groaning with peaches and blackberries, and the same will relieve the grape market.

In view of these probabilities, every fruit grower should study the situation so as to make the best of it. Grape vines upon arbors, which have been permitted to overbear for years, have doubtless met with a merciful Providence, and will show a very large percentage of dead wood. It will be a good time this March to overhaul such arbors. Take the vines entirely off, make such repairs as are needed and put back the vines shorn of about 75 per cent. of the wood, whether it be dead or alive. The arbor way of growing grapes is a sure way of getting a heavy crop of pretty near valueless fruit, at least as far as flavor and color is concerned, and the away the miserable weakly half-ripened wood and advantage should be taken of the opportunity to put the vine back upon a civilized basis. The same advice is good as regards honeysuckles, clematises, and other flowering vines.

Old peach orchards may be made young again by severe cutting back. A good many will hesitate to do what may be safely done in this direction. I once heard a practical and successful peach grower relate his experience in cutting back large trees. The buds were winter-killed so there was no hope of a crop that year, so in March he cut the trees back to within five or six feet of the ground leaving stubs of branches, some of which were nearly two inches in diameter. Instead of killing the trees as his neighbor peach-orchardists prophesied it would, they made a magnificent new growth, and the autumn being favorable, matured a nice lot of fruit buds. The following year more than a bushel per tree of fine fruit was gathered, and the trees instead of being long and straggling had taken on heads somewhat like young trees. This severe pruning must be done in March as soon as the weather becomes warm enough to thaw the frost in the wood. It will not do to do it after trees are in leaf.

THINNING FRUIT BY SEVERE PRUNING.

A noted pear grower in Toledo, O., who takes many premiums at the State Fair, gives very high culture and then prunes severely in March. In this way he gets a strong, vigorous growth, and the vigor being thrown into the portion of fruit buds left after pruning gives very fine fruit, which commands a ready market, even when ordinary fruit is rotting in the dealer's store. I asked him once if such high pressure system would not shorten the life of his trees. "O, yes, I suppose so, but for a pear tree a short life and a merry one is the most profitable. What use is a tree of any kind if it does not give regular crops of salable fruit? If by this method, I can get a crop that will more than pay for high-priced land every year, what matters it if my trees do die twenty or thirty years sooner than those of some man who is codling a lot of barren trees? What I want is some results while I live."

At the recent Western New York Horticultural Meeting, President Barry showed some very fine winter pears. He has done the same thing for many years, and this year I asked him to tell the Society how he managed to grow Winter Nelis to about four times the size that it commonly reaches under ordinary management.

His answer (somewhat abbreviated) was that trees growing in rich ground were severely pruned in late winter, and the fruit thinned somewhat if necessary when partly grown. The latter, however, under his man's severe pruning, was rarely necessary. His man pruned more severely than he himself would if he had it to do, but the results certainly were all that could be wished for. The same results may be reached by thinning the canes of red raspberries and blackberries.

A MESSENGER OF PEACE AND GOOD WILL.

As I was coming away from the meeting referred to, I made a chance acquaintance upon the cars of a young man who lives in the neighborhood of Mr. Green's farm, and he told me an interesting item in regard to the influence the Fruit Grower is exerting far from home. He had a cousin in far off Washington who had been in business in a city near the Pacific coast, but had failed and retired to a little farm to see if he could make a living for his family. The New York cousin made up a package of papers and mailed him and among them was a copy of the Fruit Grower. This copy greatly interested the Western man, who was not only pleased with the fruit knowledge it dished up, but with the great amount of other interesting reading it contained, which makes it one of the best family papers in the country. Recently he wrote the New York cousin that he had subscribed for it and received more than the value of his money in premiums. It will be hard to estimate the good this one paper will do so far away from many of the privileges which Eastern people enjoy, but it will doubtless be (without any slang intended) "immense."

I wish every family in the more thinly settled portions of this country could have the reading of this paper. In many homes either no paper at all is taken, or else just a little local sheet containing less matter altogether than is found on two pages of the Fruit Grower. Perhaps if every reader of this would do a little thinking, he or she might call to mind some family who would be pleased to have such a monthly messenger come to their home. I do not know how a pleasanter favor could be shown than by putting them in the way of getting and reading Green's Fruit Grower. I have enjoyed Mr. Green's personal friendship for many years and about the first thing he asks me whenever we meet is whether I can suggest any improvement in the paper, and after racking my brains a good many times I come each time to one conclusion, and that is, the only way to make it better is the way the boy suggested to his mother about the custard pie: "Make it bigger." I enjoy the several departments of the paper so much that I wish they could be enlarged, but then I reflect that that would mean the curtailing of the other departments, and so am thrown back upon the only alternative—that of making it larger. Aside from the fact that a large amount is already being furnished for the money there are other reasons why it would probably not be best to enlarge, a principal one being that it might not be as thoroughly read in all departments, as it is now. I take a good many papers, and there is only one beside this which I read nearly all of, simply because I cannot afford the time.

If the Fruit Grower was much larger I should have to skip a part of it, so, perhaps it is better all around that it is not. In conclusion do not forget the suggestion that each reader push along the work of civilization by getting another family to read Green's Fruit Grower.

FRUIT GROWING AND INTELLECTUAL ADVANCEMENT.

Doubtless most of my readers know more or less of Mr. T. B. Terry. He is almost a neighbor of mine, for although it is eight miles to his home, I can climb a hill just back of my house, and looking down and across the Cuyahoga Valley see to within two miles of the little farm he has made so famous. This winter Mr. Terry is helping along the Farmer's Institutes in Missouri, and writing some interesting letters to the Practical Farmer about his travels. Just now he is in the Ozark mountains in Southern Missouri among the fruit growers. There is a section in that region about two hundred miles long and 100 wide which is excellently adapted to fruit growing. A little of it lies in Arkansas, but is mostly in Missouri. It is estimated that in ten years there will be in those Ozark counties 30,000,000 apple trees, each bearing a barrel of big red apples, and Mr. Terry says the Ben Davis apples grown here are quite good to eat. It is quite a noted country, too, for strawberries and grapes and blackberries. Strawberries do wonderfully and Sarcoxie is one of the four largest strawberry producing points in the whole country. A man near there picked 320 crates from an acre, and Mr. Terry says that a list of those who have produced 250 crates or more per acre would fill a column or more. (I presume 24 qt. crates are meant.)

Now I judge that many of the people as in other mountainous parts of the South are as yet quite ignorant of much that people in Ohio and New York are quite familiar with, and I have been thinking since reading Mr. Terry's account of these fruit-starting operations, what a wonderful change will come over this whole region in the next twenty years. These berry growers ship as far as New York city. They receive quotation circulars from the metropolis of the Nation, and business letters and stencil plates and New York checks. They are brought almost into personal contact with New York merchants living thirteen hundred miles away. They deliver their daily shipments into the hands of express messengers who run into Kansas City or the great city of St. Louis. After a while some of them will jump onto a train and go to St. Louis, too, to see who handles their berries and when they get back their children and neighbors will get a hankering to go, too, and when a cheap excursion is advertised a dozen or more will go to the city. It may be to Memphis or New Orleans or Galveston, perhaps. These excursionists will come back with new ideas. They may, perhaps, see signs in the cars, "no spitting on the floor;" they may enter some large restaurant and see two hundred people eating, none of whom put their knives in their mouths. They will see many contrivances and conveniences which will enlarge their ideas and wants and the result will be a gradual mixing of leaven which in time will leaven the whole lump. The fruit growers will rub against package men and commission agents and freight solicitors and traveling newspaper men and the attrition will be constantly rubbing off little angles and rough places in their lives and habits. They will need literature upon their calling and papers like Green's Fruit Grower will find their way into their homes. In fact I presume it has already reached there and no doubt some of these rude mountain women may have to stop reading it long enough to drive the pigs and chickens away from the kitchen steps.

Along with the horticultural journals will come meetings for consultation and planning, and after that here and there a home will have a neat grass plat around it, and beds of cannas and geraniums and roses. The wives and children of neighbors who pick the berries and sort the peaches, will come under the irresistible influence of their surroundings, and gather all sorts of bits of education and refinement. Fragments of botanical and chemical knowledge will attach themselves to them, just as wild burrs stick to their clothes and be about as hard to get rid of. The time I am prophesying of is not many years distant, nor is it many years since a little bundle of trees, perhaps from some Rochester nursery, first found its way into this wild region and demonstrated what was possible.—L. B. Pierce.

Five Hundred Dollars for a Tomato.

The proprietor of the Fairview Seed Farm, Rose Hill, N. Y., is introducing a wonderful new Tomato. It is named the Giant Everbearing, and bears enormous fruit that ripens very early. Plants of this variety grow to the height of seven feet, and bear from June to the middle of October. To hasten its introduction, a prize of Five-hundred Dollars is offered to the person who grows from the seed of this tomato, one tomato that weighs three pounds. The seed can be obtained only at the Fairview Seed Farm, where all inquiries concerning the offer should be addressed.